WL-TR-97-6007

INDEX TO U.S. ARMY AIR CORPS INFORMATION CIRCULARS

PART I: HEAVIER-THAN-AIR CIRCULARS NO.1-715
PART II: LIGHTER-THAN AIR CIRCULARS NO. 1-157



ENGINEERING DIVISION AIR SERVICE MCCOOK FIELD, OH

OCTOBER 1997

FINAL REPORT FOR 01/01/19-12/01/39

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.

19971022 078

DTIC QUALITY INSPECTED S

PLANS AND PROGRAMS DIRECTORATE WRIGHT LABORATORY AIR FORCE MATERIEL COMMAND WRIGHT PATTERSON AFB OH 45433-7523

### REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

4 ACTIVICY LICE CALLY (Lagree Mark)	1 2 DEDOOT DATE	3. REPORT TYPE AN	D DATEC COVERED
1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE OCT 1997	FINAL	01/01/1912/01/39
4. TITLE AND SUBTITLE INDEX TO			5. FUNDING NUMBERS
INFORMATION CIRCUI		CORFD	C
PART I: HEAVIER-TI		RS NO.1-715	PE
			PR
PART II: LIGHTER-	THAN AIR CIRCULA	1K5 NU. 1-15/	
6. AUTHOR(S)			TA
			พบ
7. PERFORMING ORGANIZATION NAME	· ·		8. PERFORMING ORGANIZATION REPORT NUMBER
PLANS AND PROGRAMS	S DIRECTORATE		NEI ON NOWEN
WRIGHT LABORATORY	·		•
AIR FORCE MATERIE	COMMAND		
WRIGHT PATTERSON A	AFB OH 45433-752	23	
	a den constante da l'orana constanti à principal de l'accident de l'acci		
9. SPONSORING/MONITORING AGENCY	NAME(S) AND ADDRESS(ES	)	10. SPONSORING / MONITORING AGENCY REPORT NUMBER
PLANS AND PROGRAMS	DIRECTORATE		AGENCY REPORT NOWIBER
WRIGHT LABORATORY			WL-TR-97-6007
AIR FORCE MATERIE	L COMMAND		
WRIGHT PATTERSON A	AFB OH 45433-752	23	
11. SUPPLEMENTARY NOTES			
12a. DISTRIBUTION/AVAILABILITY STAT			12b. DISTRIBUTION CODE
APPROVED FOR PUBLE	C RELEASE; DIST	RIBUTION IS	
UNLIMITED.			
13. ABSTRACT (Maximum 200 words)			
			. 1.75 . 605.56
INDEXES BY SUBJECT			
INFORMATION CIRCUI			
1919 AND 1939 AND			
OFFICE. THIS REPOR			
CIRCULAR NO. 677 A			
CIRCULAR'S NUMERIO		LUDING TITLE	INFORMATION
ABOUT CIRCULARS 6	78 TO 715.		
14. SUBJECT TERMS			15. NUMBER OF PAGES
MCCOOK FIELD, DAY			56
U.S. ARMY AIR CORI	S INFORMATION C	IRCULARS	16. PRICE CODE
	ander hangelik ersonamen hingelig inne hall mengsyken men sakahangan hild engkanjan si fit en mesi sakan sayamakhali kan		
	SECURITY CLASSIFICATION	19. SECURITY CLASSIFIC	
OF REPORT UNCLASSIFIED	OF THIS PAGE UNCLASSIFIED	OF ABSTRACT UNCLASSIFI	ED SAR
			l l

#### GENERAL INSTRUCTIONS FOR COMPLETING SF 298

The Report Documentation Page (RDP) is used in announcing and cataloging reports. It is important that this information be consistent with the rest of the report, particularly the cover and title page. Instructions for filling in each block of the form follow. It is important to stay within the lines to meet optical scanning requirements.

- Block 1. Agency Use Only (Leave blank).
- Block 2. Report Date. Full publication date including day, month, and year, if available (e.g. 1 Jan 88). Must cite at least the year.
- Block 3. Type of Report and Dates Covered. State whether report is interim, final, etc. If applicable, enter inclusive report dates (e.g. 10 Jun 87 30 Jun 88).
- Block 4. <u>Title and Subtitle</u>. A title is taken from the part of the report that provides the most meaningful and complete information. When a report is prepared in more than one volume, repeat the primary title, add volume number, and include subtitle for the specific volume. On classified documents enter the title classification in parentheses.
- Block 5. Funding Numbers. To include contract and grant numbers; may include program element number(s), project number(s), task number(s), and work unit number(s). Use the following labels:

C - Contract PR - Project
G - Grant TA - Task
PE - Program W'U - Work Unit
Element Accession No.

- Block 6. <u>Author(s)</u>. Name(s) of person(s) responsible for writing the report, performing the research, or credited with the content of the report. If editor or compiler, this should follow the name(s).
- Block 7. <u>Performing Organization Name(s) and Address(es)</u>. Self-explanatory.
- Block 8. <u>Performing Organization Report</u>
  <u>Number</u>. Enter the unique alphanumeric report number(s) assigned by the organization performing the report.
- Block 9. <u>Sponsoring/Monitoring Agency Name(s)</u> and Address(es). Self-explanatory.
- Black 10. <u>Sponsoring/Monitoring Agency</u> <u>Report Number</u>. (If known)

Block 11. Supplementary Notes. Enter information not included elsewhere such as: Prepared in cooperation with...; Trans. of...; To be published in.... When a report is revised, include a statement whether the new report supersedes or supplements the older report.

Block 12a. <u>Distribution/Availability Statement</u>. Denotes public availability or limitations. Cite any availability to the public. Enter additional limitations or special markings in all capitals (e.g. NOFORN, REL, ITAR).

DOD - See DoDD 5230.24, "Distribution Statements on Technical Documents."

DOE - See authorities.

NASA - See Handbook NHB 2200.2.

NTIS - Leave blank.

Block 12b. Distribution Code.

DOD - Leave blank.

DOE - Enter DOE distribution categories from the Standard Distribution for Unclassified Scientific and Technical Reports.

NASA - Leave blank. NTIS - Leave blank.

- Block 13. <u>Abstract</u>. Include a brief (*Maximum 200 words*) factual summary of the most significant information contained in the report.
- Block 14. <u>Subject Terms</u>. Keywords or phrases identifying major subjects in the report.
- Block 15. <u>Number of Pages</u>. Enter the total number of pages.
- Block 16. <u>Price Code</u>. Enter appropriate price code (*NTIS only*).
- Blocks 17. 19. Security Classifications. Self-explanatory. Enter U.S. Security Classification in accordance with U.S. Security Regulations (i.e., UNCLASSIFIED). If form contains classified information, stamp classification on the top and bottom of the page.
- Block 20. <u>Limitation of Abstract</u>. This block must be completed to assign a limitation to the abstract. Enter either UL (unlimited) or SAR (same as report). An entry in this block is necessary if the abstract is to be limited. If blank, the abstract is assumed to be unlimited.

## AIR CORPS INFORMATION CIRCULAR

PUBLISHED BY THE CHIEF OF THE AIR CORPS, WASHINGTON, D. C.

Vol. VII

June 30, 1932

No. 677

# INDEX

TO

### U. S. ARMY. AIR CORPS INFORMATION CIRCULARS

 $\nabla$ 

PART I-Heavier-than-Air Circulars Nos. 1 to 677 inclusive PART II-Lighter-than-Air Circulars Nos. 1 to 157 inclusive

For list of Obsolete Circulars and those Circulars the supply of which is exhausted, see Numerical Lists, pages 29 to 45 inclusive; and pages 49 and 50



DIIC QUALITY INCPEUTED S

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON: 1932

# INDEX TO UNITED STATES ARMY AIR CORPS INFORMATION CIRCULARS

### PART I.—HEAVIER-THAN-AIR CIRCULARS

Nos. 1-677, Inclusive

#### SUBJECT LIST

A	Informatio
A-1. See "Airplane."	Circular N
ABC. See "Engines"	
AC See "Sport Pluge"	
Accelerometers, Dynamic Accelerometer Calibration	2
Accessories, Instructions for the Storage of Airplanes, Engines, Their Parts and Accessories Accidents. See "Crashes."	
A. E. F., Final Report of Chief of Air Service to the Commander in Chief	1
Aerial Bombardment. See "Bombardment." Aerial Navigation, Instructions, Provisional	
April (heprystian:	
For all Arms	
For Target Practice at Fort Monroe, Va	1
North all in Observation Practiced with Fifth Corns First American Army	
Aerial Photographs, Use in Topographic Mapping	1
Agrical Photography Manual	
Aerial Regulations, International	5
4 . 1-1 (Parking)	
According to the Accord	(
A seed transmiss! Release for P-1R and P-5 Airplanes by Standard Analytical Method for P-	Coci mination,
of C. G. and M. A. C.	{
Aerofoil. See "Airfoil."	
Aeromarine. See "Airplane."	
Accompanies See "Fragine"	
Agreementing Spar Static Test of Duralumin Spar	
Aeromarine Propeller, Destructive Whirling Test	
Assessed Roof and Magazine List	
Agronautics Meterology and Aeronautics	
Aileron, Effectiveness	
Alloren Wind Tunnel Test of Aileron Characteristics.	
A:- Plead Test of Real Systion and Air Riged Type Mixture Controls	
Air Coolers, Test of	
and the second s	
Air Flow: Around a Rotating Cylinder	
Visual Study of Flow Discontinuity, Cylindrical Camber Airfoil	
TT: 11 (1 6 1 T)	
Air Intakes, Comparative Effect on Engine Operation	
Air intraces, Comparative Enect on Engine Operation	
Air Mail. See "Airplane."	,
Air Medicine. See "Medical." Aircraft Development since the Armistice	
Aircraft Development since the Armistice	
Aircraft Ignition, Recent Developments	
Aircraft Ignition, Recent DevelopmentsAirdrome Landing Field Flood Light Type A-1, Handbook of Instruction	
Airdrome Landing Field Flood Light Type A-1, Handbook of Instruction	
Airfan, Head Resistance Measurement	
Airfan, Type FA-9	· · ·

	Informati Circular l	
Dayton-Wright Nos. TT-1 and TT-2, Dayton-Wright Nos. 5 and 6		328
Effect of Sweep Back and Sweep Forward.	5	547
Gottingen No. 227		267
Gottingen No. 244		248
Gottingen No. 255		155
Gottingen No. 387		328
R. A. F. 19		248
Section Properties of a Series of Aerofoils Suitable for Propeller Design		597
Springer No. 3	2	248
U. S. A		198
U. S. A. 25, 26, 27, 28, 29		49
U. S. A. 27 A, B, and C.	:	224
U. S. A. 27-C	3	334
U. S. A. 27-C		455
U. S. A. 30, 31, 32, 33, and 34		244
U. S. A. 47 (and Supplement)		511
36 by 6; Wind Tunnel Test (see Appendix)		
Visual Study of Flow Discontinuity on Cylindrical Camber Airfoil	_ 1.0,	564
Wind Tunnel Test of Clark Y, Clark Y-15, Clark Y-18, Clark Y-21, Gottingen 398, and S.	т `	001
Ae'-27a, 6'' × 36'' Airfoils, Tests Nos. 233, 234, and 237	1.	<b>57</b> 3
		197
Airfoil Data, American and British Airfoils		147
Airfoil Propeller, Shift of Angle of No-Lift on Propeller Aerofoils		141
Airplanes:		463
A-1, Wind Tunnel Test		<b>5</b> 06
AO-1, Performance Test		285
A. R. Morane Saulnier, Performance Test		365
Aeromarine PG-1, Static Test		518
Air Mail, Static Test of Bellanca DH		520
Alouette, Stress Analysis		463
Ambulance, Wind Tunnel Test		506
Atlantic AO-1, Performance TestAtlantic CO-8, Performance Test		522
Bellanca DH, Static Test		518
Boeing—		
PW-9, Performance Test with Curtiss D-12 High Compression Engine		479
PW-9, Performance Test with Curtiss D-12 Low Compression Engine		502
PW-9, Static Test		466
Pursuit, Performance Test		460
Bomber, Wind Tunnel Test of Heavy Bomber Study		531
CO-1, Wind Tunnel Test		321
CO-2A, Wind Tunnel Test		453
CO-4 Fokker—		
Performance Test	415,	507
Performance Test with Nose Radiators		457
Performance Test with Side Radiators		456
CO-5, Performance Test	452,	534
CO-6, Performance Test		521
CO-6, Static Test.		508
CO-8, Atlantic		522
Comparison of the Structural Design Requirements for Airplanes with the Loads Obtained in		
Scale Pressure Distribution Tests.		672
Consolidated PT-1, Performance Test	526,	, 527
Consolidated PT-1, Static Test		<b>5</b> 59
Consolidated PT-3, Study of Horizontal Tail Surfaces of		615
Cox Heinkel, Static Proof Test of Aileron, Stabilizer, and Elevator		514
Cox Klemin TW-2, Static Test		437
Curtiss—		
JN-4, Impact Test of Tail Skid and Landing Chassis		409
JN-6, Cooling System Test with Packard 1A-744 Engine and Side Radiators		294
JN-6H, Methods of Correcting the Longitudinal Balance		27

Airplanes—Continued.	Information Circular No.
Curtiss—Continued.	
	513
NBS-1, Performance TestNBS-4, Torsional Test of Fuselage	266
NBS-4, Torsional Test of FuselageNight Pursuit, Static Test	530
Night Pursuit, Static TestO-1, Performance Test	538
O-1, Performance Test with Packard "1500" Engine	539
O-1, Performance Test with Packard "1500" Engine	306
O-1, Static TestsOrenco "D," Performance Test	492
Orenco "D," Performance TestPW-8, Static Test	501
PW-8, Static TestPW-8, Wind Tunnel TestPW-8, Wind Tunnel Test	496
PW-8, Wind Tunnel Test PW-8A, Performance Test with 400 H. P. Curtiss D-12 Low-Compression Engine	132
PW-8A, Performance Test with 400 H. P. Curtiss D-12 how-compression and D-VI-B Roland, Performance Test	102
D-VII-Fokker	233
	71
Cooling System Flight Test Performance Test with Liberty Six Engine Performance Test with Liberty Six Engine	310
Performance Test with Liberty Six Engine Performance Test with Packard "1237" Engine	29
Performance Test with Packard "1237" Engine	104
Static Test of Chassis Test on Steel Tubing and Wing Beams Test on Steel Tubing and Wing Beams	288
Test on Steel Tubing and Wing Beams	413
D-VIII-Fokker, Performance Test with 110 H. P. Oberdiser Engine	410
D-IX-Fokker, Performance TestDB-1, Wind Tunnel Test	401, 410
DB-1, Wind Tunnel Test DH-Bellanca, Static Test	210
DH-Bellanca, Static Test	0.41
DH-4— Cooling System Test with Experimental Auxiliary Radiator	241
Cooling System Test with Experimental Auxiliary Radiator	34
(Dayton-Wright) Static Test of FuselageEconomy Test Observation Airplane	461
Economy TestPerformance Test, Equipped as Corps Observation AirplanePerformance Test, Equipped as Corps Observation Airplane	287
Performance Test, Equipped as Corps Observation Amplane Performance Test with 300 H. P. Hispano-Suiza Engine	155
Performance Test with 300 H. F. Hispano-odda 22-5-	528
Radiator TestsStatic Test of Landing Chassis	<b>3</b> 8
Static Test of Landing Chassis	36
Static Test of Landing Chassis	480
Take-off Characteristics	
DH-4B—	156
Cooling System with Hispano-Suiza 300 H. P. EngineFuel Consumption during Climb with Form "D" Supercharger	398
Fuel Consumption during Climb with Form D Super-	346
Fuel Consumption Test	582
Interference Tests on Model and Property	355
Wind Tunnel Test Binard Budders	603
Wind Tunnel Tests of Model Fitted with various Time and Tests	552
Wing Flap Test of Wind Tunnel Model	271
DH-4C, Cooling System Test	386
DH-4M2 Mail, Performance Test	512
DH-4M2, Static Test of Fuselage	441
Dayton-Wright TA-3, Performance Test-1-1-1-1-1	388
Dayton-Wright TA-3, Static Test Dayton Date Formulas and Methods	644
Design, Miscellaneous Collected Airplane Studental Bosign	183
Design Performance and Design Charts	621
Design of Trussed Metal Spars for Single Bay Design of Trussed Metal Spars for Single Bay	315
Determination of Best Wing Loading for Single Seattle	625
Determination of Stability from Flight Test Stick Force Data  Determination of Structural Airplane Drag  Determination of Structural Airplane Drag	629
Determination of Structural Airplane Drag	546
Douglas C-1, Performance Test	309
Douglas C-1, Performance TestO-2, Performance Test	536
O 2 Performance Test with Packard 1900 Edgins	554
O-2, Performance Test with Packard "1500" Engine and Small Wings O-2, Static Test O-14, Effect of Ring Type Engine Cowls on Model of (Wind Tunnel Test 35) O-14, Effect of Ring Type Engine Cowls on Model of (Wind Tunnel Test 35)	659
O-14 Effect of Ring Type Engine Cowis on Moder of Communication	176
O-14, Effect of Ring Type Engine Cowls on Model of (Wind Tulner Test 60)  E-8 Vought, Performance Estimate	609
E-8 Vought, Performance Estimate	517
Effect of Cellule Arrangement on the Rate of Autorotation by the Strip Monager Elias NBS-3, Torsional Test of Fuselage	412
Elias NBS-3, Torsional Test of FuselageElias TA-1, Performance Test	210
Elias TA-1, Performance TestEndurance Notes	
Address of the second of the s	

indexes Continued	Information Circular Nc.
irplanes—Continued. Engineering Division CO-5, Performance Test	
Engineering Division, CO-6, Performance Test	521
FVL-8 Pomilio, Performance Estimate	221
Fokker CO-4—	
Performance Test	415, 507
Performance Test with Nose Radiators	457
Performance Test with Side Radiators	456
- · · · · · · · · · · · · · · · · · · ·	
Fokker D-VII— Cooling System Flight Test	233
Performance Test with Liberty 6 Engine	71
Performance Test with Packard 1237 Engine	310
Static Test of Chassis	29
Test on Steel Tubing and Wing Beams	104
Fokker—	
D-VIII Performance Test	288
D-IX Performance Test	413
PW-5 Static Test of	400
PW-5, Wind Tunnel Test	424
PW-6 Performance Test	413
PW-7, Performance Test with Curtiss D-12 Low-Compression Engine	529
PW-7, Static Test.	491
T-2, Investigation of the Structural Strength	420
TW-4. Performance Test	414
GA-2A. Wind Tunnel Test	4/0
GAX. Performance Test	195
GAX-1. Static Test of Chassis	171
GAX-1. Static Test of Wing Structure	228
GH-11 LePere, Performance Estimate	219
Gallaudet— DB-1, Wind Tunnel Test	407, 475
PW-4. Static Test	411
PW-4, Wind Tunnel Test	472
Huff-Daland—	296
Performance Estimate of Biplace Training Plane	407
TA-2, Performance Test with Curtiss OX-5 Engine	
TA-2, Performance Test with Lawrance "R" Engine	499
TW-5, Performance Test with Wright "E" Engine	607
Induced Drag of Any Biplane	
JL-6. See "Airplane, Junkers."	409
JN-4, Impact Test of Tail Skid and Landing Chassis	294
JN-6, Cooling System Test with Packard 1A-744 Engine and Side Radiators	27
JN-6H, Methods of Correcting the Longitudinal Balance	101
JV-Martin, Physical Tests on K Bar Struts	
Junker— Biplane, Investigation of Wings	230
L-6, Static Test	360
L-6, Stress Analysis	332
L-6, Wind Tunnel Test	367
SL-6, Performance Test	173
Keystone B-3 A, Dynamic Tests of Keystone B-3A Bomber Oleo Shock Absorber	666
Laddon, Wind Tunnel Test of Laddon Night Pursuit Airplane	33
LePere, Cooling System with Side Radiators	299
LePere GH-11, Performance Estimate	
Loening—	
COA-1, Performance Test	540
M-8, Cooling System Test	
PA-1, Static Test (see Addendum)	
PW-2, Performance Test	434
PW-2A, Performance Test	416
PW-2B. Performance Test	433

	Information Circular No.	
on it had	522	
irplanes—Continued. Loening—Continued. XCO-8, Performance Test, Equipped with Loening Wings	<b>5</b> 0	)
Irplanes—Continued.  Loening—Continued.  XCO-8, Performance Test, Equipped with Loening Wings  Monoplane, Performance Test  Cooling System Test	206	}
		1
		0
M-8 Loening, Cooling System	468	8
MB-2, Martin Bonnes Performance Test	36	2
MB-3 Thomas Morse, Wind Tunnel Test	38	6
MB-3 Triomas Morea Static Test		
MB-6 Thomas Test	26	34
Mail Drightan, 1	290, 43	35
Martin Bolling System	5	15
MB-2, Cooling System System System Static Test of Elevator Controls Static Test of Elevator Controls Cannon Static Test Nonrecoil Cannon System Space System	4	24
NBS-1, Tersonial Test	3	42
NBS-1, 10180	1	.01
NBS-1, Torsonial Test  NBS-1, Torsonial Test  Static Test of Elevator Controls  Test of Davis 3-inch Nonrecoil Cannon  Martin JV, Physical Tests on K Bar Struts  Martin Torpedo Airplane, Performance Test	1	139
Test of Davis on K Bar Struts		
Martin JV, Flyston		280
Martin Tolpedo Lar		270
Messenger		43
Martin Torpedo Anguardo,  Messenger— Performance Test		285
Messenger— Performance Test Static Test Wind Tunnel Test		
		435
Static Test  Wind Tunnel Test  Morane Saulnier Type AR, Performance Test  NBS-1— Curtiss, Performance Test  Martin Bomber, Performance Test		<b>2</b> 90
NBS-1- Porformance Test		515
NBS-1— Curtiss, Performance Test Martin Bomber, Performance Test Martin Bomber, Torsional Test NBS-3 G. Elias, Torsional Test of Fuselage NBS-3 G. Curtiss Torsional Test of Fuselage		517
		513
Martin Bolinott,  NBS-3 G. Elias, Torsional Test of Fuselage  NBS-4, Curtiss, Torsional Test of Fuselage  Night Pursuit, Curtiss, Static Test  Night Pursuit PW-2. Design and Stress Analysis of Wings		<b>2</b> 66
NBS-3 G. Enas, Totslord Test of Fuselage  NBS-4, Curtiss, Torsional Test of Fuselage  Night Pursuit, Curtiss, Static Test  Night Pursuit PW-2, Design and Stress Analysis of Wings  Night Pursuit PW-2, Design and Stress Analysis of Wings		150
NB5-4, Curtiss, Static Test		
Night Furshit PW-2, Design and Stress Analysis		<b>5</b> 09
Night Pursuit PW-2, Design and Stress Analysis of Wingston Night Pursuit PW-2, Design and Stress Analysis of Wingston O-1. See "Airplanes—Curtiss O-1." O-2 Douglas, Performance Test with Liberty 12 Engine O-2 Douglas, Performance Test with Packard "1500" Engine O-2 Douglas, Static Test O-2 Dougl		536
O-1. Be Important Test with Liberty 12 (1500" Engine		554
O-2 Douglas, Performance Test with Packard "1500" Engineering Control of the Matériel Division Night Observation, Wind Tunnel Test of 1/20 Scale Model of the Matériel Division Night Observation, Wind Tunnel Test of 1/20 Scale Model of the Matériel Division Night Observation, Wind Tunnel Test of 1/20 Scale Model of the Matériel Division Night Observation, Wind Tunnel Test of 1/20 Scale Model of the Matériel Division Night Observation, Wind Tunnel Test of 1/20 Scale Model of the Matériel Division Night Observation, Wind Tunnel Test of 1/20 Scale Model of the Matériel Division Night Observation, Wind Tunnel Test of 1/20 Scale Model of the Matériel Division Night Observation, Wind Tunnel Test of 1/20 Scale Model of the Matériel Division Night Observation, Wind Tunnel Test of 1/20 Scale Model of the Matériel Division Night Observation, Wind Tunnel Test of 1/20 Scale Model of the Matériel Division Night Observation, Wind Tunnel Test of 1/20 Scale Model of the Matériel Division Night Observation, Wind Tunnel Test of 1/20 Scale Model of the Matériel Division Night Observation, Wind Tunnel Test of 1/20 Scale Model of the Matériel Division Night Observation Night Observatio	ervation	
O 2 Douglas, Static Test and Scale Model of the Matériel Division 11-		610
Observation, Wind Tunnel Test of 1/20 Bears		
O-2 Douglas, Ferrimana O-2 Douglas, Static Test O-2 Douglas, Static Test Observation, Wind Tunnel Test of 1/20 Scale Model of the Matériel Division Night Observation, Wind Tunnel Test of 1/20 Scale Model of the Matériel Division Night Observation, Wind Tunnel Test Ordnance D Armament Test Occupant System		14
Ordnance D—		144
Airplane Ordnance D  Armament Test  Cooling System  Performance Test  Performance Test  Analytical Method for Determination		· 51
Cooling System  Performance Test  Orenco "D" Curtiss, Performance Test  Standard Analytical Method for Determination  Orenco "D" Aerodynamical Balance by Standard Analytical Method for Determination		306
Performance Test Orenco "D" Curtiss, Performance Test P-1B and P-5, Aerodynamical Balance by Standard Analytical Method for Determination	n of C. G.	. 502
O-engo "I)" Curuss, I care by Standard Allary was		. 593 . 358
P-1B and P-5, Aerodynamical Balance 5		- 356 166
P-1B and P-5, Aerodynamical Balance by Station and M. A. C.  PA-1 Loening, Static Test (see Addendum)  PG-1, Wind Tunnel Test.		_ 166 365
and M. A. C.  PA-1 Loening, Static Test (see Addendum)  PG-1, Wind Tunnel Test  PG-1, Static Test  PG-1, Static Test  PG-1, Static Test		_ 300
PA-1 Loening, Static Test (See Flags) PG-1, Wind Tunnel Test PG-1, Static Test PT-1, Performance Test		520, 521
PG-1. Static Test		000 179
PG-1, Wind Tunner Testander PG-1, Static Test		225
PT-1, Performance Test		223 434
PT-1, Static Test		150
PW-1, USA-27 Wings Test		416
PW-2, Loening, Performance Teast-	- <b></b> -	433
PW-1, Structural Design PW-1, USA-27 Wings		417
PW-1, USA-27 Wings		472
PW-2B, Performance Test		406
PW-2A, Performance Test		400 474
PW-4, Wind Tunnel Test		413
PW-2B, Performance Test		491
PW-5, Static Test  PW-5, Wind Tunnel Test  PW-6, Performance Test  PW-7, Static Test  PW-7, Static Test  PW-7 Resformance Test with Curtiss D-12 Low-Compression Engine		529
PW-6, Performance Test.		020
PW-7, Static Test Curtiss D-12 Low-Compression Engineer		
PW-5, Wind Tunnel Test		

lanesContinued.	Informa Circular
PW-8, Static Tests	
PW-8 Wind Tunnel Test	
W-8A, Performance Test with Curtiss D-12 Low-Compression Engine	
PW-9, Performance Test with Curtiss D-12 High-Compression Engine	
PW-9, Performance Test with Curtiss D-12 Low-Compression Engine	
PW-9, Static Test	
Performance—	
Empirical-Theoretical Method of Comparative Prediction of Airplane Performance	
Performance and Design Charts	·
Performance from the Standpoint of Modern Conception of Drag	
Theoretical Method of Analyzing and Predicting Airplane Performance	
Phillips "Alouette," Stress Analysis	
Pomilio FVL-8, Performance EstimatePomilio FVL-8, Performance Estimate	
Pomilio PVL-8, Static Test of Wing Cellule with Unequal Loads on Right and Left Wings	
Pursuit—	
Comparative Study of Type I Airplanes with Various Power Plants	
Design Characteristic for Most Suitable Pursuit Airplanes	
Determination of the Best Wing Loading	
Wind Tunnel Test of Laddon Night Pursuit Airplane	
Rigidity and Flexibility of Airplane Structures	
Roland D-VI-B, Performance Test	
S-6, Thomas-Morse, Performance Test	
SE-5, Static Test of Ski	
SL-6 Junker, Performance Test	
Silhouettes of	
Spad 13, Performance Test with 220 H. P. Wright Engine	<b>-</b>
Spad 16-A, Performance Estimate with 236 H. P. Lorraine-Deitrich Engine	
Spinning Characteristics	
Stability	
Structures, Study of Dural and Steel for	
T-2 Transport, Investigation of the Structural Strength	
TA-1 G. Elias, Performance Test with Lawrence R-9 Engine	<b>-</b>
TA-2 Huff-Daland, Performance Test with Curtiss OX-5 Engine	
TA-2 Huff-Daland, Performance Test with Lawrance "R" Engine	
TA-3 Dayton-Wright Performance Test	
TA-3 Dayton-Wright, Static TestTA-4, Wind Tunnel Test	
TW-1, Test of Cooling System	
TW-2 Cox Klemin, Static Test	
TW-4 Fokker, Performance Test	
TW-5 Huff-Daland, Performance Test	
Thomas-Morse—	
MB-3, Performance Test	
MB-3, Wind Tunnel Test	
MB-6, Static Test	
S-6, Performance Test	
Tires. See "Tires."	
Transport, Wind Tunnel Test	
Transport T-2, Investigation of the Structural Strength	
Type 1, Comparative Study with Various Power Plants	
V-40 Fokker, Wind Tunnel Test	
VCP-1, Cooling System Tests with Annular Radiator	
VE-7 Vought, Pressure Distribution over the Stabilizer	
Verville Racer, Wind Tunnel Test.	
Vought—	
E-8, Performance Estimate	
VE-7, Pressure Distribution over the Stabilizer	
XV Navy Type, Performance Test	
Weight, Structural Weight Analysis	
Whole Sa "Whole"	

Airplanes—Continued.	formation
	cular No.
Comparative Performance Test with High Compression Wright Model "H" and Packard "1237"	,
Engines	
Performance Test	
Static Test of Fuselage	
XV Vought, Navy Type, Performance Test	
Air Service, Characteristics, Limitations, and Employment	
Air Service Manual	
Airship: Full Scale Tests of the Semi-Rigid Airship RS-1	_ 619
Airways and Landing Facilities	
Alcohol-Gasoline Mixtures	_ 450
Alcohol-Water Mixtures, Tables Showing Freezing Points and Specific Gravity	_ 178
Alloy Steels, Cause of Cracking during Dip Brazing	_ 295
Alloys:	905
Copper-Silicon-Aluminum Alloys with and without Manganese	_ 385
Physical and Metallographic Properties of Copper-Zinc-Aluminum Alloys Containing Small Amount	S
of Magnesium	
Metallography of Sand Cast Aluminum Alloys	_ 449
Z-D Process for Treatment of Light Alloys to Inhibit Corrosion and to Minimize Porosity	_ 448
Almen. See "Engine."	
Alouette. See "Airplane."	10
Alsop, Test of Alsop All-Spark Ignition Device	
Altitude, Standard Altitude Chamber Test for Engines	
Altitude, Variation of Horsepower with Altitude	_ 92
Aluminum:	
Physical and Chemical Properties of Aluminum and Aluminum-Alloy Sheets—	100
Part I	
Part II	
Part III	_ 235
Aluminum Alloys:	905
Copper-Silicon-Aluminum Alloys with and without Manganese	_ 385
Metallography of Sand Cast Aluminum Alloys	_ 449
Physical and Metallographic Properties of Copper-Zinc Aluminum Alloys Containing Small Amoun	ເຮ
of Magnesium	<b>39</b> 3
Aluminum Bronze, Methods of Making Aluminum Bronze Castings	376
Aluminum Solders	<b>29</b> 8 463
Ambulance A-1, Wind Tunnel Test	-
Ammunition, Pyrotechnic Projector and Ammunition Submitted for Test	<b>3</b> 89 <b>1</b> 9
Ammunition, Test of French 37-millimeter High Explosive	
Analysis of Aircraft Accidents	_
Analysis of Supercharging	193
Angular. Method for Determining the Angular Setting of a lan flane	_ 102
Angular Velocity, Controllability, Angular Velocity, and Dynamic Stability of an Airplane about the Ax	<b>4</b> 18
Anti-Knock, Elimination of Detonation by the Addition of Xylidine, Ortho-Toluidine, Benzol, and	319
General Motors Anti-Knock No. 1	
Anti-Knock, Flight Test of Anti-Knock Injector	0.2
AO-1. See "Airplane."	14
Armament, Test of Orenco Type D Biplane	<b>2</b> 34
Armor Plate, Ballistic Properties of a Special Case-Hardening High Chrome-Nickel Light Armor Plate	<b>24</b> 2
Armor Plate, Cork and Air Spacing of Light Armor Plate	
Aspect Ratio of Single-Bay Pursuit Biplanes	
Assignment, Observation, Selection, and Assignment	
Atlantic. See "Airplane."	185
Automobile, Radio Equipped Automobile	609
Autorotation Calculated by the Strip Method, Effect of Cellule Arrangement on the Rate of	s_ 581
Axial Loads, Critical Loading of Structural Members Subjected to Combined Axial and Transverse Load	- 601
124501 - 32 - 2	

В

Circular VRI 4 "	No.
and the state of t	368
The famous of Hanger (Tent) Wantiacide by Daker & Lockwood 1118.	187
Balanced Rudders, Study of	<b>5</b> 86
	00.4
	234
n vivi to vivi f - Uleano Silico Nickol Stool	186
	473
	397
	439
	363
	301
Battery, Liberty Storage Battery Endurance Test	574
	E 5 5
Guesta for Colution of Stress in Wing Beams	555
Nonuniform Section	213
1 TV. la far Don Doorno	516
mm / CDting on Modulus of Rupture and Other Strength Properties	240
- 1 1 1 The marroage Shooping Strong In a Death Di Consulto Ol Vallandio Oliveri	674
at the Delete of Inflortion on Rooms Under Various Compinations of Dodge	471
The Destroined Boom with Avial Load of Compression	591
The fee Destroyed Hours with AVISI LONG OF COMULESSION AND WINE WINE	00.4
Moment Known	624
Bellanca DH. See "Airplane."	
B. I Elimination of Detonation by the Addition of Aylidine, Ortho-Toludine, Denzoi, and Goneral	010
Motors Anti-Knock No. 1	319
Bijur Ignition. See "Ignition."	
Bijur Starter. See "Starter."	
	607
T deeped Drog of Any Riplana	260
n: Single Ray Feenemic Limit in Aspect Ratio	345
Blower Used in Tests of Air-Cooled Cylinders	910
B. M. W. See "Engine."	
	305
Bomb Racks, Modified Weed Shackle	
T 1 June 14	141
Aerial Day Bombardment, Pilots and Observers	88
A mini Tractice Observation Rombardment, Phrsuit-Compat.	140
Tactical Manual of Aerial Bombardment	
Bombardment Manual, Aerial:	54
Part 1, Introduction and Preface	55
D I O D 1 and Develotions	56
Part 2, Rules and Regulations————————————————————————————————————	57
Don't 4' Flying Training for Pilots and Hombers	58
Part 5, Operations (Service Squadrons) and Appendix	
Bomber. See "Airplane."	21
Books, Aeronautical Book and Magazine List	587
Box Beams, Shear Strength of Plywood Webs of	113
Braender, Test of Braender Leakproof Tanks	
Brass: Dip Brazing with 80–20 Brass	203
Dip Brazing with 80-20 Brass Dip Brazing with High Melting Point Brass	297
Dip Brazing with High Melting Point BrassForged and Cast	335
Brazing: Cause of Cracking of Alloy Steels During Dip Brazing	295
Cause of Cracking of Alloy Steels During Dip Brazing	203
Dip Brazing with 80-20 Brass Point Brass Dip Brazing with High-Melting Point Brass	297
m of 11 mills Co. ((Charle Divers))	
Brewster-Goldsmith. See "Spark Plugs."  Bronze Castings, Manganese, Methods of Making, to Meet Air Service Specifications No. 11021	275
Bronze Castings, Manganese, Methods of Making, to Meet An Service Specialistic Property Starter. Fifty-hour Endurance Flight Test	302
Ruzzer Starter, Filty-nour Enquisince Fight 1680	

C-1.	See "Airplane."	tion No.
		545
		421
Calcu	ium, Plating by Means of Udylite Processlations, Standard Method of Engine Calculations	643
Calibi	ration Constant of Wright Field Five-Foot what Tulinorial	
Cam.	See "Engine." Stronger in the Cam-Shaft Drive Gears of the	
Cam-	Shaft, Comparative Mathematical Analysis of the Stresses in the Same Salts 2015 erty "12" and the Packard "2025" Engines	423
$\mathbf{L}$ ib	erty "12" and the Packard "2025" Engines	
Cann	on:	215
E	Baldwin, Ground Test of Baldwin 37-millimeter Cannon Coventry, Ground Test of Coventry 37-millimeter Mark III Airplane Cannon Coventry Bomber	226
		342
1	Davis 3-Inch, Test of Davis 3-Inch Nonrecon Camba Martin Romber	112
		146
(	Ground Test of 2.95-Inch Airplane Cannon in Martin Bomber  Tests of Modified Firing Mechanism for Baldwin 37-millimeter Cannon  George Engine	24
	Tests of Modified Firing Mechanism for Baldwin 37-minimeter Canada State of 37-millimeter Automatic Canada in Canada Engine	32
	Test of 37-millimeter Automatic Cannon in Cannon Engine- Time Study of the Movement of the Firing Mechanism of the 37-millimeter Automatic Baldwin	
	Cannon Canno Cannon Canno Cannon Cannon Canno Canno Canno	16
_	on Ring Mount, Type "A" Test	283
Cann	on Ring Wount, Type A Test	0.42
Carb	uretor: Calibration of Jet Flow Carburetor	243 572
	Calibration of Jet Flow Carburetor	<b>57</b> 0
	Development and Test of Stromberg NA-Y5D for Curtiss D-12 Engine  Development and Test of Zenith ED-52 for Liberty "12" Engine  Development and Test of Zenith ED-52 for Liberty "12" Engine	<b>33</b> 6
	Development and Test of Zenith ED-52 for Liberty 12 Engine Liberty	<b>2</b> 91
	Effect of Fuel Head at Carburetor on Brake Holse Town 1985	292
		<b>5</b> 69
	Metering Characteristics, Control of Carburetor by Supplementary Admission  Metering Jet Calibration	257
	Metering Jet Calibration	630
	Mixture Controls, Instructions to Pilots	<b>3</b> 90
	NAY-60, Dynamometer Calibration Runs on Curtiss GV-1510 Engineer	311
	Setting for the Liberty Engine for Dirigible Ose	
	Stromborg:	
	NA-D6, Test to Improve Fuel Consumption Characteristics on the 300 H. F. Hispano-Guizz  Engine  NA JE Development	<b>3</b> 09
	Engine	442
	MA-LO, Developmentaliante	314
•	NA-L5, Double Venturi Inverted Type	158
	NA-L5, Test of, on the Liberty 12 Engine.  Test of Back Suction and Air Bleed Type Mixture Controls in Flight	<b>36</b> 8
	Test of Back Suction and Air Bleed Type Mixture Controls in Figure 1. Test Chamber and Method of Making Computations	405
	Test Chamber and Method of Making Computation	405
	Zenith: Test of Canton Electrical Vaporizing Device	125
	Test of Canton Electrical Vaporizing Device	175 370
	US-52, Instructions for Installing 85-A Mixture Control	310
_	US-52, lest of, with light last	<b>40</b> 8
. Cas	Heat Treatment of Sand Cast Duralumin	449
	Heat Treatment of Sand Cast Duralumin	
	Metallography of Sand Cast Aluminium Alloys  Method of Making Aluminium Bronze Castings  Method of Making Aluminium Bronze Castings to Meet Air Service Specifications No. 11021	
	Method of Making Aluminum Bronze Castings	4
C.	Methods of Making Manganese Bronze Castings to Meet Air Service Special Servic	2
Ca	sualty Statistics and Causes, by Lieut. Col. L. H. Bauer and Maj. William Island Endurance Testsualty Statistics and Causes, First Transcontinental Reliability and Endurance Test	_
Ca	liule:	609
CE	liule:  Arrangement on the Rate of Autorotation Calculated by the Strip Method of	626
	Arrangement on the Rate of Autorotation Calculated by the Strip Methods  Consolidated PT-3 Airplane Wing Cellule in High and Low Incidence  Consolidated PT-3 Airplane Wing Cellule Through 360	)
	Wind Tunnel Test of 1/24 Scale Moder of the Boughas 5 12 1 1 1	612
	Wind Tunnel Test of 1/24 Scale Model of the Douglas C-227 Internal Degrees.	405
C	Degrees	106
Ci	namber, Carburetor Test Chamber and Method of Making Computations	72
C	paracteristics. Limitations, and Employment of the transfer of	
C	hassis. See "Airplanes" for Each Particular 2995.	_ 180
C	hassis. See "Airplanes" for Each Particular Type. hief of Air Service, A. E. F., Final Report to the Commander in Chief, A. E. F. hrome-Molybdenum, Physical Properties of Chrome-Molybdenum Steel Tubing	_ 44
C	hrome-Molybdenum, Physical Properties of Chrome-Molybdenum baces 2 2220	

	Informa Circular	No.
Ground Circular Supplement		273
		1
Circulars, Announcement of Air Service Information Circulars (1774662)		384
COA_1 See "Airplane"		395
COA-1. See "Airplane."  Column, Comparison of Column Formulas		276
Column, Comparison of Column Formulas  Columns, Tests on Combined Loading of Wooden Struts	304	
Columns, Tests on Combined Loading of Wooden StrutsColumn Charts, Nomographic Column ChartsColumn ChartsCombined Axial and Transvet	rse	110
Column Charts, Nomographic Column Charts		493
Loads		
Communications Officers.  Notes, Provisional		78
		79
		80
		20
		589
Connections, Test of Various Types of Gasoline Hose Connections.		13
Connections, lest of Various Types of Consolidated Aircraft Co. See "Airplane."	0.5	110
	95	, 110 521
		418
Control Surface, Wind Tunnel Test of Heavy Bomber Controllability, Angular Velocity and Dynamic Stability of an Airplane about the Axis of Pitch		410
Controls:		454
Ailcron Effectiveness		101
		424
Mixture. See "Mixture Controls." Static Test of Martin Bomber Elevator Controls		
Cooling System:		241
		156
		271
		233
		294 299
		206
		264
		670
		144
Mechanical Difficulties of Prestone Cooling at 300 T. States Temperature Ordnance Model D, Test		124
Revisions in Cooling Systems for Air Cooled Cylinders Thomas Morse MB-3, Test		133
Thomas Morse MB-3, TestTW-1, Flight Test	- <i>-</i>	410
The state of the s		245
		128
The state of the s		000
Amounts of Magnesium		393
		48 74
Cords, General Descriptive Matter on Airplane Fabrics, Tapes, and Collaboration Corps Air Service—Field Manual (Provisional)		•
Corps Observation, Tactical History, Air Service, A. E. F.		-
Corrosion: Interior Corrosion of Steel Struts, and Its Prevention		
Interior Corrosion of Steel Struts, and its Flevention Investigation of Methods for Preventing the Corrosion of Metal Parts	. <b></b> .	21
Prevention of Metallic Aircraft Parts.		. 27
The transfer of Light Alloys to Inhibit Corresion		
and the state of t		
Covering Wing Gasoline Tanks in Martin Bomber		. 10
~ .		
Coverings: Comparison of Protective Airplane Wing Coverings		_ 25
The Art of City Area Chanderd Airplane Wing Coverings		
to the Application of Done and Planented Protective Coverings		
G 1 W: 1 Women't Tests of Venturi Type Cowis and Engine Nacenes Builtane 101		-
Airplane		_ 0

Cox-Heinkel. See "Airplane."	nformation
	lircular No.
Cracking of Alloy Steels During Dip Brazing	295
Crank Shafts, Vibration Characteristics of Aircraft Engine Crank Shafts	664
Crashes:	
Analysis of	633
United States Army Air Service During Calendar Years 1918-1921, and Results of Physical Example 1918 and Results and R	n-
inations for Flying During the Calendar Years 1920 and 1921	340
United States, Statistical Study of Aircraft Accidents and Forced Landings	652
Critical Loading of Structural Members Subjected to Combined Axial and Transverse Loads	<b>5</b> 81
Crystal-On, Test of Sample of Crystal-On and Report on Nonfog Giving Treatment of Glass	
Curtiss. See "Airplane."	
Curtiss. See "Engine."	
Cut-Out, Delco Automatic Generator Cut-Out	151
Cylinder:	
ABC "Dragonfly" Cylinder, Test	265
Effects on Cylinder Performance of Variation of Position and Number of Spark Plugs	
Flow of Air Around a Rotating Cylinder	
Instructions for Reinforcing Liberty Cylinders	
Lawrance-10-hour Endurance Test of All-Aluminum Cylinder	192
Liberty, Test of Standard Liberty Cylinder Mounted on a Universal Engine Crankcase	199
Smith, Performance of the 5.5-inch by 6.5-inch Smith Cylinder Unit	218
Test of Revisions in Cooling Systems for Air-Cooled Cylinders.	-
Construction, Adaptability of Hyde Welding Process to Steel Engine Cylinder Construction	364
D	
D-VII. See "Airplane."	
D-12. See "Engine."	
DB-1. See "Airplane."	
DH. See "Airplane."	0.40
Davis, Test of Davis 3-inch Nonrecoil Cannon Mounted in Martin Bomber	342
Dayton-Wright. See "Airfoil."	
Dayton-Wright. See "Airplane."	480
De Bothezat, Barograph, Type "A"	439
Decorations, Tentative List Awarded Army Air Service, A. E. F	6
Delco: Automatic Generator Cut-out, 50-hour Endurance Flight Test	
Automatic Generator Cut-out, 50-hour Endurance Flight Test.	282
Comparative Merits of Dixie Magnetos and Delco Battery Ignition System	17
Report on Foster Modification in Liberty Delco Switch Assembly	<b>6</b> 6
Design:	
Airplane Performance and Design Charts	183
Characteristics for Most Suitable Pursuit Airplane	436
Design of Cabane Struts for the PW-1 with R. A. F. 15 Tapered Wings	
Design of Standard Lugs	152
Design and Stress Analysis for PW-2 Night Pursuit Type	150
Destructive Whirling Test of Aero Marine Propeller	137
Destructive Whirling Test of "Micarta" Propeller (Westinghouse) and Rubber-Covered Propellers w	ith
Hard and Soft Rubber Leading Edges (Brunswick-Balke-Collender Co.)	· · 8
Detonation, Elimination of, by the Addition of Xylidine, Ortho-Toluidine, Benzol, and General Mot	ors
Anti-Knock No. 1	
Development, Aircraft Development Since the Armistice	
Direction Finder, Semiportable Radio, Type SCR-142	238
Dixie Magneto. See "Magneto."	
Dope:	
Airplane Doping and Dope Room Requirements	
Dopes and their Application	544
General Descriptive Matter on Dopes, and Instructions for the Application of Dope and Pigmen	ted
Protective Coverings	44
Life of Wing Coverings Using Clear Dope	
Wing Coverings, Protective	250
Doped Fuels, Effect of Doped Fuels on the Fuel System.	
Douglas See "Airplane"	

Informatic Circular N	
50 Standard of Modern Conception of Drag	60
	29
	07
Drag, Induced Drag of Any Biplane 5.  Dural, Study of Dural and Steel for Airplane Structure	68
	70
Duralumin:  Column, Crushing, and Torsional Strength of Duralumin Tubing	37
	80
	98
Heat Treatment of Sand Cast Duralumin  5 Duralumin Channels, Compression Strength  5	524
Duralumin Spar, Test of Aeromarine Duralumin Spar	18
Dynamic Stability, About the Axis of Pitch.	558
Dynamic Test of Long Stroke Oleo Strut with Compensating Valves  Dynamometer Carburetion Runs on Curtiss GV-1570 Engines	330
<b>E</b>	n = 4
	356
Elastic Axis, Determination of the Elastic Axis and Natural Periods of Visitation	645
	646
	620
	020
	567
Tail Surface No. 5 with Balanced Elevator	501
	366
	562
	210
Till II I I I I I I I I I I I I I I I I I	523
Endurance Test of Liberty Engine	7
	<b>5</b> 88
Engine Cleaning Fluids, Inflammation Tests	659
	<b>2</b> 32
<b>*</b> > 11	505
	92
Engine Horsepower, Variation with Attitude	<b>93</b>
Engines:	
· _ ~	265
D. A. Culinder Test of	252
The Design of Property of the Control of the Contro	167
TT Clandard Frains Poport	325
· TO TO CL	289
Air T-talog Outside and Inside Effect on Engine Uperation	205
	369
Almen Barrel, Standard Engine Test	41
Benz, 200 H. P. Standard Engine Report.	138
Benz, 200 H. P. Standard Engine Report	357
Bijur Ignition End Starter, Test of	
C-6. See "Engine, Curtiss C-6."	
C-12. See "Engine, Curtiss C-12." Calculations, Standard Method	421
~ ··	
Curtiss— C-6, 50-hour Endurance Test	272
C C Standard Engine Report	<b>32</b> 9
a so (a ) Clandard Engine Deport	330
D. 10. Development and Test of Stromberg NA-Y511 Uarpuretor tor	572
D 10 Standard Engine Test of High and Low Compression Engines	550
OV 1570 Dynamometer Carburgtion Kills on	630
OTT P (T) -1	373
Common for Estimating Fuel Consumption on the Basis of Piston Displacement and revolutions	
Curves for Estimating Tue. Consumption of the	375

Engines—Continued.  Dragonfly. See "Engines, ABC Dragonfly."  Information Circular No.	n.
Dragonfly. See "Engines, ABC Dragonny. Circular No. E-6. See "Engines, Rausie."	_
E-6. See "Engines, Rausie."  Effect of Reduced Engine Compression Pressure on Pre-Ignition with Micarta Plugs2	
Fuel Pumps See "Pumps."	.3
Fuel Pumps. See "Pumps."  Gasoline Hose Connections  Geared, Performance and Design of Five-geared Engines  14  Geared, Performance Run	:3
Geared, Performance and Design of Five-general 223	
Hall-Scott L-6, 50-hour Endurance Run	<b>!</b> 7
Hall-Scott I_R. Standard Engine Report	
Hispano-Suiza-	
E. Variation in Performance with Degree of Thiototal Crimowal States	5
E and I, Ignition Timing Institutions and	79
H. 300 H P.; 50-hour Endurance Test, with State Postio	33
H, Test with Pistons Which Give 6.5: 1 Compression Ratio	59
K (Cannon Model), Test of	32
Performance Test of Hispano-Suiza with Airplanes. See Amplanes.  Report of Cannon Test on Hispano-Suiza Engine	26
Report of Cannon Test on Hispano-Suiza Engine	23
Starting Torque on Liberty, Hispano-Suiza, and other Aviation Engineer 2 300 H. P. and Liberty 12, Induction System Pressure 1	70
300 H. P. and Liberty 12, Induction System Pressure1 300 H. P., 50-hour Endurance Test at High Speeds1	28
300 H. P., 50-hour Endurance Test at High Speeds	131
300 H. P., Vibration Characteristics1 Torque Stand and Flight Test of Compression Relief Device1	64
Torque Stand and Flight Test of Compression Relief Device	
Ignition. See "Ignition."	177
See also "Engines, Wright."  Ignition. See "Ignition."  Isotta-Fraschini V-6, Test	
	122
Lawrance, Standard 50-Hour Endurance TestLawrance, 10-Hour Endurance Test, Lawrance, All-Aluminum Cylinder	192
Lawrance, 10-Hour Endurance Test, Lawrance, An-Aluminum Oysander	
T 11	551
Lawrance, 10-Hour Endurance Test, Lawrance, 111  Liberty—  Air-Cooled, 50-Hour Test  Comparative Flight Performance of, equipped with 5.42 and 6.5 Compression Ratios  Comparative Flight Performance Starting Devices	293
Comparative Highly religionance of equipments	111 311
Comparative Test of Auxiliary Starting Devices  Comparative Test of Auxiliary Starting Devices  Determination of Carburetor Setting for the Liberty Engine, for Dirigible Use  Description Test of Buzzer Starter	302
Determination of Carburetor Setting for the Liberty Engine, for Diagnost 50-hour Endurance Flight Test of Buzzer Starter	134
50-hour Endurance Flight Test of Buzzer StarterFlight Test of Packard FuelizerFlight Test of Packard Fuelizer	66
Flight Test of Packard Fuelizer Foster Modification on Liberty Delco Switch Assembly Foster Modification on Liberty Engine	523
Foster Modification on Liberty Delco Switch Assembly  Free Throttle Endurance Test of Liberty Engine  Free Throttle Endurance Test of Liberty Engine	346
Free Throttle Endurance Test of Liberty Engine  Fuel Consumption Test of DH-4B with Liberty Engine  Fuel Consumption Roard	48
Ignition System Histration Dougland	504
Instructions for Reinforcing Liberty Cymhasses and Tood	422
Minimum Fuel Head to Operate Liberty 12 22822	. 6
Minimum Fuel Head to Operate Liberty 12 Engine on Propeller Load  Single Cylinder, Test of Monel Metal Valves  Standard Cylinder Mounted on a Universal Engine Crankcase, Test of	199
Standard Cylinder Mounted on a Carrent	126
Storting Torque	223
12 and 300 H. P. Hispano-Suiza, Induction Systems 1.12 Caroline	22
12 and Wright-Hispano 300 H. I., Operating	2:
10 Dijur Storter	30:
19 Ungger Starter, DU-HUUL DAGGET V	42
12, Comparative Mathematical Analysis of the Stresses in Cam-shart Dive deals of 12, Comparative Mathematical Analysis of the Stresses in Cam-shart Dive deals of 12" and Packard "2025" Engines	1
"12" and Packard 2020 Engineer 1 To be Territion Systems	57
12, Comparative Merits of Dixie Magneto and Delco Ignition Systems 12, Development and Test of Zenith ED-52 Carburetor for	26
12, Development and Test of Zenith ED-52 Carburetor for	2
12, Performance, with a Compression Ratio of 6.5 to 1	63
12, Preliminary Test of Bijur Ignition and Starting Motor	
14, 1880 of Standard Harris Lion."	25
Lion. See "Engine, Napier Lion."  Materials, a Metallurgical Report on Materials Used in Foreign Aeronautical Engines  Ottopled Engine Report	1
Materials, a Metallurgical Report on Materials Used in Foreign Aeronauteur English Mapier-Lion, Standard Engine Report	
OX-5. See "Engine, Curtiss OX-5."	. •

Engines—Continued.	nation ar No.
- · ·	135
1A-744, Standard 50-hour Endurance Test Ratio	284
1A-744, Standard 50-hour Endurance Test	130
	269
1A-2025, Test	423
	256
	317
	42
R-1, Comparison of Piston Side Thrust in the Modified R-1, Radial Engine and the Single Thrust in the Modified R-1, Radial Engine and the Single Thrust in the Modified R-1, Radial Engine and the Single Thrust in the Modified R-1, Radial Engine and the Single Thrust in the Modified R-1, Radial Engine and the Single Thrust in the Modified R-1, Radial Engine and the Single Thrust in the Modified R-1, Radial Engine and the Single Thrust in the Modified R-1, Radial Engine and the Single Thrust in the Modified R-1, Radial Engine and the Single Thrust in the Modified R-1, Radial Engine and the Single Thrust in the Modified R-1, Radial Engine and the Single Thrust in the Modified R-1, Radial Engine and the Single Thrust in the Modified R-1, Radial Engine and the Single Thrust in the Modified R-1, Radial Engine and the Single Thrust In the Modified R-1, Radial Engine and the Single Thrust In the Modified R-1, Radial Engine and the Single Thrust In the Modified R-1, Radial Engine and the Single Thrust In the Modified R-1, Radial Engine and the Single Thrust In the Modified R-1, Radial Engine and the Single Thrust In the Modified R-1, Radial Engine and the Single Thrust In the Modified R-1, Radial Engine and the Single Thrust In the Modified R-1, Radial Engine and the Single Thrust In the Modified R-1, Radial Engine Thrus	525
n · T c fo t Enduronce Test	324
Danie E & Standard Engine Report	191
at 1 1 11th de Chambor Tost	106
A M	126
	451
Stress Analysis, Stresses Occurring in the Cam-shaft Drive Gears of the Elberty 12 and the Tubines	423
Transport in antal Religibility and Endurance Test	2
II C D Standard Engine Report	325
Universal Test Engine	47
a G (III to Teste Propolini "	356
V-6. See "Engine, Isotta-Fraschini.  Variation in Volumetric Efficiency of an Engine with Valve Lift	000
TT7 4.	361
Carburetion, Heat Rejection, and Weight Data	
50-hour Endurance RunStress Analysis	447
Stress Analysis Walker Radial, Standard Report	251
Wasp ABC, Standard Engine Report	167
**** * 7 (	
U 9 Porformance	344 227
Hispano, Operating on Automobile Gasoline	221
See also "Hispano-Suiza."  England, Report of General Mitchell's Inspection Trip	. 391
The state of the s	
Exhaust Equipment Temperature Determinations	179
F	
Fabric, General Descriptive Matter on Dopes	_ 44
The second of the second secon	-
Talling Man Determination of the Rate of Descent Of a Failing Man and of a Failantee of Descent Of a Failing Man	-
The Carried Courses by Engine Impulses and Vibration, Fremmary Study Organical	_ 010
Ellma Catalog	,
Finder, Direction, Type SCR-142Fins, Wind Tunnel Tests of DH-4B Model Fitted with Various Fins and Rudders	
Fins, Wind Tunnel Tests of DH-4B Model Fitted with Various Fins and Italians Fire Hazard Tests of Ignition Equipment	_ 596
Fire Prevention, Aircraft	
T(111,	
Figure Designs of Investigation Made on Handley Page Slots and Plaps.	- 000
Flore Medified Mark I	_ 00-
Flight Test Data, Determination of Stability from	625
TO J. T. : _ 1.4.	
A-1, Handbook of Instructions for	
A-2 and A-3, Handbook of Instructions for Airdrome	
A-4, Handbook of Instructions for Airdrome Landing Field	
Comparative Test	
Fog, Test of Sample of Crystal-On	
Fog, Test of Sample of Crystal-OnFokker. See "Airplane,"	
FURKEL DEC All plane,	

<b>.</b>	Circular No.
orced Landings. See "Emergency Landings." oreign Aeronautical Engines, A Metallurgical Report	222
oreign Aeronautical Engines, A Metallurgical Report	97
Oreign Aeronautical Engines, A Metallurgical Report	73
ormation Flying	
'ormulas:	000
Additional Formulae for Seams Subjected to Axiai and Lateral Bosiery Data Formulas and Methods.	395
Comparison of Column  Miscellaneous Collected Airplane Structural Design Data Formulas and Methods  Miscellaneous Collected Airplane Structural Design Data Formulas and Methods  Miscellaneous Collected Airplane Structural Design Data Formulas and Methods  Miscellaneous Collected Airplane Structural Design Data Formulas and Methods	644
Precise for Restrained Beam with Axial Boad of	591
Symmetrically Placed Side Loads————————————————————————————————————	ining 624
Moment Known	00
Moment Known  Foster, Foster Modification on Liberty-Delco Switch Assembly  France, Report of General Mitchell's Inspection Trip  France, Report of General	391
France, Report of General Mitchell's Inspection 1779 and Specific Gravity of Alcohol-Water Mixture Freezing Points, Tables Showing the Freezing Points and Specific Gravity of Alcohol-Water Mixture	es 178
Fuel:  Clogging of Fuel Strainers  Clogging of Fuel Strainers  Fuel on Fuel System	308 383
Investigation of the Effect of Doped Fuel on Fact System 12" Engine on Propeller Load Test to Determine Minimum Fuel Head to Operate Liberty "12" Engine on Propeller Load	422
Fuel Consumption:	1e <b>3</b> US
Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-Stand Characteristics of the Stromberg Type NA-D6 Carburetor on 300 H. T. Hispano-St	ns per
Curves for Estimating Fuel Consumption on the 200	376
Minute	39
DH-4B with Liberty 12-A and Form D Supercharge and Broke Specific Fuel Consumpt	ion 33
Effect of Fuel Head at Carburetor on Blaze Holes	31
Method of Estimating Power and Fuel Consumption at Various Attitudes  Test of the DH-4	340, 40
Test of the DH-4Fuelizer, Test of Packard Fuelizer in Liberty "12"	10
Fuelizer, Test of Packard Fuelizer in Plottey	3
Fuselage:  DH-4  Glassing Stress in a Monocoque Fuselage of Constant or V	Iorioble
DH-4  Longitudinal and Tranverse Shearing Stress in a Monocoque Fuselage of Constant or V	67
Longitudinal and Tranverse Shearing Stress in a Monocoque Fuselage of Constant	5
Cross-SectionNBS-3, G. Elias, Torsional Test	5
NBS-3, G. Elias, Torsional TestNBS-4, Curtiss, Torsional Test	33
NBS-4, Curtiss, Torsional TestXB-1-A, Static Test	4'
XB-1-A, Static TestWind Tunnel Test of Eight Models	
G	
GA-2A. See "Airplane."	
GAX. See "Airplane."	
G. Elias. See "Airplane."	
Gallaudet. See "Airplane."	
Casoline'	4
Alcohol, Gasoline Mixtures	
Analysis of Some United States Gasolines Aviation Caroline and Commercial Aeronautic Gasoline	
Aviation A Associate Casoline	
Comparative Test of Homogenous Gasoline and Commercial Aeronautic Gasoline  Determination of Water in Gasoline	
Determination of Water in Gasoline	
Liberty "12" and Wright-Hispano 300 11. 2. 3.	
Low Test Gasoline Specifications	
Specifications and Methods of Testing	
Test of Hose Connections The test of Hose Connections	
Use of Commercial Low-1est Automobile Gassian	
Gauge Set. The McCollum-Peters Six Element 1911	
Case First Dumns Engine Drivell, 1906 C 33555	
Coored Aviation Engines, I citormance and -	and the
Gears, Comparative Mathematical Analysis of	
Concretor Airfan I VDC FA-7	
Generator Cut-out, Delco Automatic 50-hour Endurance Test Generator Cut-out, Delco Automatic Generator Cut-out, Delco Automatic Generator Cut-out	
Generator Cut-out, Deico Automatic Generalis	
10.1701 99 2	

Inform Circula	ation r No.
Generators, Power Required to Drive Magnetos and Generators	42
Generators, Radio Generator Airfan Head Resistance Measurement	63
Germany Report of General Mitchell's Inspection Trip	391
Clidere	444
Gliders Static Test and Determination of Elastic Axis of the (Materiel Division) Improved Stressed	0.40
Skin Type Glider Wing	646
Courses Test of Sample of Crystal-On	182
Gorgles Vacuum Nonfrosting	258
Goodyear, Test of Thick-walled Leak Proof Tanks	136
C. HA Con HA infail ??	00 F
C D. L	605
Guide, Report of Control Cable Guide Running Test95	), 110
Н	
Hall Scott See "Engine"	107
Hangar Parformance of Tent Hangar Manufactured by Baker & Lockwood.	187
Hangar, Performance of Test Hangar Manufactured by Missouri Tent & Awning Co	188
Hartmann & Braun Laboratory Test on Electric Thermometer	277
Hood Effect of Engl Head at Carburetor on Brake Horsepower and Brake Specific Fuel Consumption	336
Heat Treating, Bath Composed of Sodium Chloride, Sodium Carbonate, and Sodium Cyanide	363
Heat Treatment of Sand Cast Duralumin	408
Heater, Test of Engine Heater	232
Hercules, Standard Test of Hercules Spark Plugs	116
Hispano-Suiza. See "Engine."	
History, Tactical History of Corps Observation, Air Service, A. E. F.	<b>7</b> 5
Holland, Report of General Mitchell's Inspection Trip	391
Horsepower:	
See ((Engine ?)	
Mathod of Computing Horsepower Available from Engine with Two-bladed Wood Propeller	505
Variations of Horsepower with Altitude	92
Hose Connections, Test	13
Huff Doland See "Airplane"	004
Hyde, Adaptability of Hyde Welding Process to Steel Engine Cylinder Construction	364
I	•
Ignition:	00
Bijur Preliminary Test of Bijur Ignition End Starting Motor for Liberty "12"	22
River Test of River Ignition End Starter for Airplane Engines.	357
Comparative Merits of Dixie Magneto and Delco Battery Ignition System	17
Delco Automatic Generator Cut-out	151
Device, Test of Alsop All-Spark Ignition Device	18
Equipment, Fire Hazard Tests of	596
Recent Developments in	611
Standard Test of Hercules Spark Plugs	116
Test of Kellogg 600 Watt Reverse-Current Relay	189
Index	
Air Service Information Circular Nos. 1-565, Inclusive	<b>5</b> 65
Air Service Orders and Circulars, January 1, 1919, to December 31, 1923. Superseded by Circular	
5_1 O.C. A.S. May 16, 1924	400
Technical Reports of Engineering Division, Air Service, Nos. 1-1300, January, 1918-June, 1920	90
Indicators Rate-of-Climb, Description, and Theory	
Inflammation Tests—Engine Cleaning Fluids	. 000
Inflection Investigation of the Movements of the Points of Inflection on Beams under various Com-	•
binations of Loads	. <del></del>
Information Circular, Volume III, No. 273, Changes in	. 419
Injector Flight Test of Anti-Knock Injector	. 014
Insignia Comparative Merits of Various Insignia	. 90
Inspection Penart of General Mitchell's Inspection Trip.	. 391
Instruments Performance of Airspeed Tubes Exposed to Rain Drops and Freezing Rain	. 943
Instruments Testing of Airplane Tachometers	- 0.
Intake, Air, Outside and Inside, Comparative Effect on Engine Operation	_ 289

	Information Circular No.
Intake Bell, Experiments on the Design of, for a Wind Tunnel	566
International Aerial Regulations	_ 129, 204
Interphone, SCR-57, RemodeledInterphone, Spalding Voice Tube Interphone	10S
Interphone, Spaiding Voice Tube Interphone	201
Isotta-Fraschini. See "Engine." Italy, Report of General Mitchell's Inspection Trip	391
J	
JL. See "Airplane, Junker."	
JN-6H. See "Airplane."  Jet Calibration, Carburetor Metering	<b>5</b> 69
Junker. See "Airplane."	
n n n n n n n n n n n n n n n n n n n	100
Kellogg, Test of Kellogg 600-Watt Reverse Current Relay	189 557
Kellogg, Test of Kellogg 600-Watt Reverse Current Remy	331
L L	
	the
Laboratory, Medical, Report of the Medical Research Laboratory and School for Flight Surgeons for	<b>2</b> 31
Laboratory, Medical, Report of the Medical Research Laboratory and Told Calendar Year 1920	<b>5</b> 86
Laboratory Standard Test Methods and Computation, Tower Transcription	
Laddon. See "Airplane."  Landing, Emergency Landings from Low Altitudes	<b>3</b> 66
Landing, Emergency Landings from Low Attitudes Landing Facilities and Airways	404
Landing Field Flood Light:	583
	601
A-1, Handbook of Instructions for	606
A-2 and A-3, Handbook of Instructions for Airdrome	
Landing Fields:	2
First Transcontinental Reliability and Endurance lest	77
Meterorology and Aeronautics	81, 84
Rules ord Design of Shock Absorbing Units	602
Landing Gears, Determination of Stresses in Landing Gears and Design of Education Landing Lights, Carbic, Night	253
Landing Lights, Carbic, Night  Lantern Slides, Catalogue  See "Engine"	119, 409
Lawrance. See "Engine."	
Le Pere. See "Airplane."	634
Least Work Method to the Evaluation of Initial and Temperature Stresses, 127	181
Least Work Method to the Evaluation of Initial and Temperature Stresses, Apparent Legal Questions Affecting Federal Control of the AirLiaison, Air Service Liaison Regulations	89, 90
Liaison, Air Service Liaison Regulations	
Liberty Engine. See "Engine."	301
Liberty Storage Battery Endurance TestLights, Carbic, Test of Night Landing Lights	253
Lights, Carbic, Test of Night Landing Lights.	673
Load:  Circular Ring with Concentrated Loads  Circular Ring with Spars in Multi-Spar Construction of Airplane Wings	394
Circular Ring with Concentrated Loads  Distribution among the Spars in Multi-Spar Construction of Airplane Wings  Distribution among the Spars in Multi-Spar Construction of Compression, and with One Restrict Avial Load of Compression, and Compression, a	enining
Distribution among the Spars in Multi-Spar Construction of Airplane Wings- Precise Formulas for Restrained Beam with Axial Load of Compression, and with One Restrained	624
Precise Formulas for Restrained Beam with Axial Load of Compression,  Moment Known	650
Moment Known  Proposed Method of Determining Design Tail Loads for Airplanes  Proposed Method of Determining Design Tail Loads for Airplanes	493
Structural Members under Combined Axial and Trans-	498
Study of S. T. as Formula for Load Factors.	318
Load Factors. Effect of Variation in Load Factors on Directors.	315
Loading, Best Wing Loading for Single-Seater Ludding to Combined Axial and Transverse I	Loads 581
Loading, Critical Loading of Structural Members Subject Avial and Transverse Load	ing 650
Loading, Test of Armstrong-Whitworth Steel Space	2/0
Loading, Test on Combined Loading of Wooden Struts	nts and
Loads, Precise Formulas for Restrained Beam with Axial Load of Compression, Equal Two Symmetrically Placed Side Loads	<b>59</b> 1
Loening. See "Airplane."	67
Loening. See "Airplane."  Longitudinal and Transverse Shearing Stress in a Beam of Constant or Variable Cross-Section.  Longitudinal and Transverse Shearing Stress in a Beam of Constant or Variable Cross-Section.	113
Longitudinal and Transverse Shearing Stress in a Beam of Constant of Variable Lubricating Oils, Specifications and Methods of Testing	16
Lubricating Oils, Specifications and Methods of TestingLucas, Test of Lucas Electric Engine Starter	15
Lucas, Test of Lucas Electric Engine StarterLugs, Design of Standard Lugs	

MB-2. See "Airplanes."	
MB-3. See "Airplanes."	
MB-6. See "Airplanes."	
	ormatio cular No
Marin, 1est of Model 1916, after Changes Were Made in Top Lock Container to Assummedate	
Single Shot Mechanism	. 5
Remedies for Machine Gun Malfunction	. 49
Test of Synchronizer Type C-8	. 39
Magazine, Aeronautical Book and Magazine List  Magneto, Dixie, Comparative Merits of Dixie Magneto and Delco Battery Ignition System  Magneto Book and Magazine List	. 2
Magneto, Power Required to Drive Magnetos and Generators	. 1
Mail, DH-4M2. See "Airplane."	4
Manganese Bronze Castings, Methods of Making	977
manganese bronze, Physical Properties	07
Manual, Air Service	_
Landai, Corps Air Bervice, Field	~
and plants, one of Merical I motographis in Todographic	10
The less of model 1910 after Changes were Made in 100 Lock Container to Accommodate Simple	
bnot Wechanism	59
2.22 Mil Die Airplane.	
Measurement of Distances	18
medical.	
Air Medical Service 3, 99, 237, 359, 4	03, 462
All Medical Service and Flight Surgeon	
Extracts from Air Service Information Circular Air Medical Service	= 0.0
Medical Research Laboratory and School for Flight Surgeons for the Calendar Year 1920, Report	231
and observations of the control of t	
Metallic Aircraft Parts, Corrosion Prevention  Metallography of Sand Cast Aluminum Alloys	274
Metallography of Sand Cast Aluminum Alloys  Metallurgical Report on Materials Used in Foreign Aeronautical Engines  Metals Entire and Villandia	449
Metals, Fatigue and Vibration	222
Meteorology, Transcontinental Reliability Contest	77
220 Mod of Beast Work Applied to Reguldant Structures	400
and the Fronts	495 115
mica lugs. Dee Spark flugs."	110
Micarta, Destructive Whirling Test of "Micarta" Propeller	8
Micaria Liberty Propeller, Destructive Whirling Test	
	114
Minimizer Temperature Relation of the Standard Air Corps Iron-Constantin Thermocouple	654
Missouri Tent & Awning Co., Performance of Hangar (Tent)	188
Mitchell, Gen. W. L., Report of Inspection Trip to France, Italy, Germany, Holland, and England,	
Made during the Winter of 1921-1922 (Technical Supplement)	391
Instructions for Installing Mixture Control (85-A) in Zenith Carburetors	
Instructions to Pilots	175
Test of Back Suction and Air-Bleed Type Mixture Controls in Flight  Morane-Saulnier See "Airplane"	257
Morane-Saulnier. See "Airplane."	368
Monel-Metal Valves, Test in Liberty Single-Cylinder Engine	•
	9
Motion-Picture Catalogue	0 400
around rest of Cannon Turret Mount	
Mount, Type "A," Report of Test of Cannon Ring Mount.	112
N N	283
NA-D6. See "Stromberg."	
NA-L5. See "Stromberg."	
NBS-1. See "Airplane."	
Nacelles, Wing Tunnel Test of Venturi Type Cowls and Engine Nacelles Suitable for Multi opping Air	
planes	847
Napier. See "Engine."	647

	Information
Air Service Manual	Circular No.
First Transcontinenta: Reliability and Endurance Test	9
instructions, Provisional	82
Neison Gun Control, Marin, 1est of Model 1916, after Changes were made in Top Lock Container	to
Accommodate Single-Shot Mechanism	<b> 5</b> 9
Night Landing Lights, Carbic	<b> 25</b> 3
Nomographic Column Charts	304, 446
Nomographic Column Charts with Isobars of Weight and Tensile Strength	631
Observation:	
Aerial Observation for All Arms	85
Aerial Observation for Target Practice at Fort Monroe, Va., during the Season Ending August 2	86,
Methods Practiced with Fifth Corps First American Army on the Front	142
Observation, Selection, and Assignment	115 120
Tactical History of Corps Observation, Air Service, A. E. F.	120 75
Odier Portable Engine Starter, Test	190
Omcers, Reserve Officers, April 15, 1920	69
Oil, Aviation Engine	661
Oils, Relation of Laboratory Tests and Cold-Weather Motor Operation of Various Oils, Pt. 2	640
Ulls, Specifications and Method for Testing Lubricating Oils	118
Oleo Strut with Compensating Valve, Dynamic Test of Long Stroke.	. <b>_ 65</b> 8
Operations, Notes on Recent	76
Operations Officers, Regulations for Corps Air Service Ordnance "D." See "Airplane."	86
Ordnance "D," Cooling Test	144
Orenco. See "Airplane."	144
Ortho-Toluidine, Elimination of Detonation by the Addition of Xylidine, Ortho-Toluidine, Benzol, an	đ
General Motors Anti-Knock No. 1	310
Oxygen, Practical Field Service Use of	543
Oxygen, Use of Gaseous and Liquid	667
Oxygen Gas Apparatus, Description and Adjustment of Prouty	_ 174
P	
P-1B. See "Airplane."	
P-5. See "Airplane."	
PA-1. See "Airplane." PG. See "Airplane."	
PT-1. See "Airplane."	
PW. See "Airplane."	
Packard. See "Engine."	
Parachute:	
Cloth, Physical Characteristics under Varying Atmospheric Conditions	- 651
Test of Model 300-D-1 Parachute	_ 15
Weight, Determination of the Rate of Descent of a Falling Man and of a Parachute	- 628
Performance:	
Airplane Performance and Design Chart	- 183
Airplane Performance from the Standpoint of Modern Conception of Drag	<b>- 5</b> 60
Effects on Cylinder Performance of Variation of Position and Number of Spark Plugs	- 401
Empirical-Theoretical Method of Comparative Prediction of Airplane Performance  Theoretical Method of Analyzing and Predicting Airplane Performance	- 68
Photographs, Aerial, Use of, in Topographic Mapping	- <b>55</b> 3
Photography, Catalogue of Motion-Picture Films and Lantern Slides	119 460
Photography, Manual	- <b>9</b> 6
Physical Examinations. See "Crashes."	
Piston, Comparison of Piston Side Thrusts in the Modified R-1 400 H. P. Radial Engine and the Single	<del>:-</del>
Cylinder Test Engine	525
Piston Rings, Test of Standard Water-Cooled Liberty-12 Engine with Various Piston Rings and Arrang	e-
ments	- 638
Plating, Cadmium Plating by Means of Udylite Process.	- 545

Oi-	rmation ular No.
Ulumond!	
Design of Plywood Webs for Box Beams  Truss Ribs	268
Use of Balsa Wood in Plywood	473
Web Spars	<b>31</b> 3
Webs of Box Beams, Shear Strength of	587
Pomilio. See "Airplane."	
Power, Method of Estimating Power and Fuel Consumption at Various Altitudes	317
Daniel Dianet I shoretory Standard Test Methods and Computation	. 000
Dogging to Drive Aeronautic Engine Magnetos and Generators	
Projection Effect of Reduced Engine Compression Pressure on Preignition with Mica Plugs	
m m to the Data Chada at	
Prostone Cooling The Mechanical Difficulties of Prestone Cooling at 300° F. Uutlet Temperature	- 010
To the Ala Study of Possion on Wing Bromework	
Projector, Pyrotechnic Projector and Ammunition Test	<b>38</b> 9
Propeller	
A server in Destructive Whirling Test	_ 137
Green and Flight Test of a Number of Wood Propellers with Wind Tunnel Tests on a Series	)1
Was J Dannellon Models	_ 000
Comparison of Wind Tupnel Tests with Flight Test of a Number of Detachable Blade Properly	18
M. J. f Aha sama Dlan Form	_ 002
Design Section Properties of a series of Aerofoils Suitable for	_ 991
Doctrictive Whirling Test of "Micerta" Propeller (Westinghouse) and Rubber-Covered Propeller	
with Hard and Soft Rubber Leading Edges (Brunswick-Balke-Collender Co.)	- 0
Hart 1920 Model, Manual and Parts List.	_ 200
Hart, Whirling Test of Adjustable Propeller	11 648
Instructions for Assembly of Detachable Blade Propellers	246
Metal Tipping of Aircraft Propellers	240
Method Used by the Engineering Division for Computing the Horsepower Available from an Engin	505
with a Two-Bladed Propeller	12
Micarta, Destructive Whirling Test	618
Section Properties of a Series of Airfoils Suitable for Propeller Design	597
Shift of the Angle of No-Lift on Propeller Aerofoils.	147
Test to Determine Minimum Fuel Head to Operate Liberty "12" Engine on Propeller Load	422
X-14849, Investigation of Steel Propeller	145
Properties of Wood at 10 Per Cent Moisture	53
Prouty Oxygen Gas Apparatus	174
Dumpt	
Bollows (Sylphon) Fuel Pump for Liberty "12" and Wright "H" Engines	369, 458
Engine Driven Gear Fuel Pumps, Type "C"	404
Sylphon Fuel Pump	281
Pursuit	
Airplanes, Determination of the Best Wing Loading	315
Biplanes Single Bay, the Economic Limit in Aspect Ratio	260
Comparative Study of Type I Airplanes with Various Power Plants	307
Design Characteristics for Most Suitable Pursuit Airplanes	436
Pilote Notes for Pursuit Pilots	81
Regulations, Pursuit and Combat Flying Training Regulations, Provisional	83 389
Pyrotechnic, Projector, and Ammunition Test	205 123
Pyroxylin, Finishes for Aircraft	561
R .	
and the state of the state of D 1 400 H P Rediel Engine	and
Radial Engine, Comparison of Piston Side Thrusts in the Modified R-1 400 H. P. Radial Engine	525
the Single-Cylinder Test Engine	020
Radio:	62
Airfan Type FA-9	94
Auxiliary Control for Set Type SCR-08Generator Airfan Head-Resistance Measurement	63
Notes for Communications Officers	78, 79, 80
Notes for Communications Officers SCR-59, Remodeled SCR-59, Remode	323
SCR-142 Direction Finder	238

Inform	
Radio—Continued.	ar No. 30
Short Wave Radio Telephone Set	229
Transcontinental Reliability Test	2
Radiator:	
DH-4, Tests of, to Determine Best Location for Speed	<b>52</b> S
Fokker CO-4, Performance Test of, with Side Radiators	<b>45</b> 6
Follow CO. 4. Toet of	457
Side Type Test of Curtiss IN-6 with Packard 1A-744 Engine	294
Side Type, Test of LePere	<b>29</b> 9
D & F 10 Virtail Wind Tunnel Test	248
Rake Angle Wind Tunnel Test of the Effect of Rake Angle on Suction in Exhaust Stubs	179
Rate-of-Climb Indicators, Description and Theory	31
The section of Gardine 11	
Pecceiving Set Type SCR-59 Remodeled	<b>3</b> 23
Redundant Structures, Application of the Method of Least Work	495
Pagulations:	
Corps Air Service Operations Officers	86
Flying Training Regulations (Provisional)	81
Pursuit and Combat Flying Training Regulations	83
Relay, Test of Kellogg 600-Watt Reverse Current Relay	189
Report:	180
Final Report of Chief of Air Service A. E. F. to the Commander in Chief A. E. F.	2
First Transcontinental Reliability and Endurance Test	391
General Mitchell's Inspection Trip to France, Italy, Germany, Holland, and England	97
Official Airplane Report Form Reserve Officers, List of, April 15, 1920	69
Ribs:	312
Design of Large Trussed Ribs	<b>55</b> 6
Experimental 15-inch Metal Spars and 11-foot Chord Metal Wing Ribs, Tests on	
Experimental Reinforced Plywood Truss Ribs 21	443
Strength of Wing Ribs	673
Ring, Circular Ring with Concentrated Loads	
Roland. See "Airplane." Rubber, Storage and Preservation of Rubber Goods, Tires, and Tubes	48
	<b>5</b> 86
Rudders, Study of Balanced	603
Rudders, which fullified feets of Diff-1D lithical fronted with	
S	
S-6. See "Airplanes."	
SCR. See "Radio."	
SE-5. See 'Airplanes."	
SL-6. See "Airplanes."	665
Seams, Additional Formulae for Seams Subjected to Axial and Lateral Loads.	597
Seams, Additional Formulae for Seams Subjected to Management Section Properties of a Series of Airfoils Suitable for Propeller Design	390
Section Properties of a Series of Antons Sulvable to Trope Selection Properties of a Series of Antons Sulvable to Trope Selection Properties of a Series of Antons Sulvable to Trope Selection Properties of a Series of Antons Sulvable to Trope Selection Properties of a Series of Antons Sulvable to Trope Selection Properties of a Series of Antons Sulvable to Trope Selection Properties of a Series of Antons Sulvable to Trope Selection Properties of a Series of Antons Sulvable to Trope Selection Properties of a Series of Antons Sulvable to Trope Selection Properties of a Series of Antons Sulvable to Trope Selection Properties of Antons Selection Properties	120
Selection, Observation, and Assignment Shackle, Modified Weed Shackle for Bomb Racks	<b>3</b> 05
as as it if Diseased Wale of Day Booms	<b>5</b> 87
et 1 Alicebre Demossis Tosts of Koystone HeXA DOMDER VIEW	
me to the transfer of the Manager of the Manager of the transfer of the transf	
C::: Al Allows with and Without Villenductor	
Smith Cylinder Unit, Performance Test	230

•	Circular No
Solder, Investigation of Silver Solder	26
Spad. See "Airplane."	
Spar:	E1/
Design of Plywood Webs for Box Beams	516
Design of Trussed Metal Spars for Single Bay Airplane	621
Effect of Eccentricities on Stresses in Airplane Spars	438
Experimental 15-inch Metal Spars and 11-foot Chord Metal Wing Ribs, Tests on	556
Experimental Metal	<b>5</b> 90
Load Distribution among the Spars in Multi-Spar Construction of Airplane Wings	39-
Reinforced Ply-Wood Web Spars	313
Static Test of Aeromarine Duralumin Spar	524
Static Test of Engineering Division Experimental Steel Spar	519
Static Test of Kerber-Boulton Experimental Spar	55
Supplementary Report on Tests of 64-Inch Metal Spars.	63
Test of Armstrong-Whitworth Steel Spars Under Combined Axial and Transverse Loading	65
Tests on 6¼-Inch Metal Spars	62
Spark Plug:	
AC, Standard Test	24
Brewster-Goldsmith Model 1-A, 100-hour Endurance Test	20
Effects on Cylinder Performance of Variation of Position and Number of Spark Plugs	40
Effects of Reduced-Engine Compression Pressure on Pre-Ignition with Micarta Spark Plugs-	2
Method and Equipment for Cleaning and Testing	55
Mosler M-1, Standard Test (and Supplement)	
Standard Test of Hercules Spark Plugs	
Speaking Tube	
Specification, Method and Specification for Testing Lubricating Oil	11
Specification, Low-Test Gasoline	16
Speed, Bamburg Speed-Measuring Station	
Spinning, Characteristics, Airplane	61
Spoke Lacing, Effect of Spoke Lacing on the Physical Properties of Airplane Wire Wheels	53
Springer No. 3. See "Airfoil."	
Spruce, Crushing Strength at Varying Angles of Grain	25
S. T. Ae. Formula, Study of, for Load Factors	49
Stability, Determination of Stability from Flight Test Stick Force Data	62
Stability, Longitudinal Stability of Airplanes	5·
Stability, Study of Controllability, Angular Velocity, and Dynamic Stability of an Airplane ab	out the
Axis of Pitch	4
Standard Altitude Chamber Test for Engines	10
Starter:	
Auxiliary, Comparative Test	1
Bijur, Preliminary Test	
Bijur, Test of Bijur Ignition End Starter	3
Lucas, Test	1
Odier, Test	
Starting Device, 50-hour Endurance Flight Test (Buzzer Starter)	3
Starting Switches, Tests of Magnetically Operated Starting Switches.	2
Static Testing, Present Procedure	
Steel:	
Alloy, Cause of Cracking during Dip Brazing	2
Ballistic Properties of a Urano-Silico-Nickel Steel	
Physical Properties of Chrome-Molybdenum Steel Tubing	4
Study of Dural and Steel for Airplane Structure	
Steel Propeller, X-14849	
Steel Spar, Static Test of the Engineering Division Experimental Steel Spar	
Steel Struts, Interior Corrosion and Its Prevention	
Steel Tubing:	_
Effect of the Ratio of Diameter to Gage Thickness upon the Torsional Strength	
Steel Tubing and Wing Beams Taken from the Fokker D-VII, Test on	
Thin-Walled Seamless, Round and Streamline	
Stick Force Data Determination of Stability from Flight Test	6

Storage:	Information Circular No.
Airplanes, Engines, Their Parts and Accessories	256
Liberty Storage Battery Endurance Test	301
Preparations for Aviation Engine Storage	451
Storage and Preservation of Rubber Goods, Tires, and Tubes	48
Strainer, Clogging of Fuel Strainers.	542
Strength, Column, Crushing, and Torsional Strength of Duralumin Tubing	470
Strength, Crushing Strength of Spruce at Varying Angles of Grain	<b>25</b> 9
Stress Analysis:	
"Alouette" Airplane	<b> 5</b> 20
Application of the Method of Least Work to Redundant Structures	<b>4</b> 95
Charts for the Solution of Stresses in Airplane Wing Beams	555
Deflection of Beams of Nonuniform Section	213
Design of Plywood Webs for Box Beams	<b>5</b> 16
Distribution of Load among the Spars in Multi-Spar Construction of Airplane Wings	<b>3</b> 94
Economic Limit in Aspect Ratio of Single-Bay Pursuit Biplanes	<b> 260</b>
Effect of Routing on Modulus of Rupture and Other Strength Properties	<b> 24</b> 0
JL-6	<b>33</b> 2
Model W-1 Engine	<b>4</b> 47
Movements of the Points of Inflection on Beams under Various Combinations of Loads	<b> 47</b> 1
Structural Members under Combined Axial and Transverse Loads	493
Wing Cellule of the Multi-Spar Type of Wing Construction with Special Reference to the Load	ing
Conditions of the Standard Static Test	<b> 5</b> 2
Wings, Stress Analysis and Design of, for PW-2 Night Pursuit	150
Stresses:	
The Allowable Stress in Tubes Subjected to Torsion	641
Application of the Least Work Method to the Evaluation of Initial and Temperature Stresses	634
Determination of Stresses in Landing Gears and Design of Shock Absorbing Units	602
Effect of Eccentricities in Airplane Spars	<b> 43</b> 8
Revised Nomographic Column Charts with Isobars of Weight and Tensile Strength	631
Stromberg Carburetor:	•
NA-D6, Test to Improve Fuel Consumption on the 300 H. P. Hispano-Suiza Engine	<b>3</b> 09
NA-L5, Development of Stromberg, Inverted Type Model	442
NA-L5, Instructions for Stromberg NA-L5 Double Venturi Inverted Type	314
NA-L5, Test of, on the Liberty "12" Engine NA-Y5D, Development and Test of Stromberg, for Curtiss D-12 Engine	158
Structural Members Under Combined Axial and Transverse Loads	572
Structural Weight of Airplanes	493
Structures, Application of the Method of Least Work to Redundant Structures	39
Struts:	495
Comparison of Column Formulas	205
Dynamic Test of Long Stroke Olea Strut with Compensating Valve	395
K Bar, Physical Tests on Struts from JV-Martin Airplane	658 101
Reserve Bending Strength of Struts	353
Strength of Bent Struts	
Structural Design of Cabane Struts for the PW-1 with R. A. F. 15 Tapered Wings	<b>5</b> 80 <b>172</b>
Wooden, Test on Combined Loading	172 276
Supercharger, DH-4B, Fuel Consumption during Climb	398
Supercharger, Test of Supercharger Air Coolers	<b>39</b> 9
Supercharging, An Analysis of the Effect of Supercharging	195
Sweep Back, Effect of Sweep Back and Sweep Forward on an Airfoil	193 547
Switch, Liberty Delco, Report on Foster Modification	66
Switches, Starting, Operating Tests	014
Sylphon Fuel Pump for Liberty "12" and Wright Model "H" Engines.	. 281
Synchronizer C-8, Test of Machine Gun Synchronizer	396
Synchronizer, Electrical Gun Synchronizer Test	194
T	

T-2. See "Airplane."
TA. See "Airplane."
TW. See "Airplane."

_ Cir	cular No.
	_ 60
The task of Western Medal 44 Electrical	
TP 1:	
m 1: 1 Title of Come Observation Air Service A H. I'	
m	
made A Observation Rombardment PursuitCompat	_ 00
m w = 1 Mark od of Determining Design Tall LOSUS 101 All planes	
m a me again 16. The forming the Angular Setting	
Tail Skid, Impact Test of JN-4, Tail Skid and Landing Chassis	_ 409
m :: 0 t	
Tail Surface: Static Test on DH-4 (Dayton-Wright)	_ 23
a Toil Surfaces of Consolidated XPI-0 (NI-1)	- ~.0
Wind Tunnel Test for Elevator Hinge Moment Coefficients on the Horizontal Tail Surface No.	5
with Balanced Elevator	_ 567
with Balanced Elevator————————————————————————————————————	d
Wind Tunnel Test of Six Horizontal Tall Surface Designs having the Control of Supplement)	_ 511
Supplement)	480
Take-Off Characteristics DH-4 Airplane	
Tanks:	_ 113
Braender, Test of Experimental Leakproof Tanks	
Covering Wing Gasoline Tanks in Martin Bombers	70
Test of Crash Proof Tanks	
Test of Crash Proof Tanks Supplied by the Goodyear Tire & Rubber Co	114
That of Thick Wolled Leakproof Tanks Supplied by Miller Rubber Co	
Tapes, General Descriptive Matter on Airplane Fabrics, Tapes, and Cords	40
No. 98	378
NT. 00	010
Nr. 90	000
Nr. 91	001
No. 20	
No. 22	420
No. 34	740
No. 35	428
No. 36	==
No. 37	40
No. 38	40
No. 30	45
No. 40	40
** 44	40
No. 41 supplement	40
No. 42	40
No. 43	48
No. 44	48
No. 45	48
No. 46	=
No. 47No. 47	48
No. 48	49
No. 48 No. 49	57
No. 50	57
No. 50	
Technical Orders: No. 18	16
No. 18	16
No. 19	
No. 20	16
No. 21	34
No. 22	
No. 23	3
No. 24	9
No. 25	o
No. 26	3
NT 07	3

	ircular No.
Technical Reports, Index to Technical Reports of Engineering Division	
Telemeters, The McCollum-Peters Six Element Telemeter Strain Gauge Set	657
Temperature, Application of the Least Work Method of the Evaluation of Initial and	634
Temperature Determination, Exhaust Equipment	
Terminology, General Aeronautic Terminology	21
Test Engine, Comparison of Piston Side Thrusts in the Modified R-1 400 H. P. Radial Engine and the Single-Cylinder Test Engine	525
Test Methods and Computation, Power Plant Laboratory Standard	. <b>_ 5</b> 89
Thermocouple, Millivolt-Temperature Relation of the Standard Air Corps Iron-Constantin	654
Thermometer, Electric, Hartmann & Braun, Laboratory Test	277
Thermometer, Temperature Effect on Capillaries of Liquid and Vapor-Pressure Thermometers	
Time Study of the Movements of the Firing Mechanism of the 37-mm Automatic Baldwin Cannon Tipping, Metal, of Aircraft Propellers	16 246
Tip-Vortices Shown by the McCook Field Wind Tunnel	
Tires, Storage and Preservation of Rubber Goods, Tires, and Tubes	48
Discussion of Airplane Tires and Wheels (and Addendum)	<b> 3</b> 03
Report on Special Airplane Wheel and Tire (see Supplement)	154
Report on 36 by 8 Inch Straight-Side Tire and Wheel	207
Results of Static Tests on Standard Airplane Tires and Wheels	220
Report on Special Airplane Wheel and Tire (28 by 4 Straight-side Tire, One-piece Rim)	<b>27</b> 8
Torque Stand and Flight Test of Compression Relief Device on 300 H. P. Hispano-Suiza	131
Torque, Starting Torque on Liberty, Hispano-Suiza, and other Aviation Engines.	126
Torsion:	
Allowable Stress in Tubes Subjected to Torsion	641
Torsion in Multispar Cantilever Wings, Some Aspects of	627
Torsion on Wing Framework, Progress Report on Study of	584
Torsional Strength of Steel Tubing	263
Torsional Test:	
Curtiss NBS-4 Fuselage	513
G. Elias NBS-3 Fuselage	517
Martin Bomber NBS-1	515
Training:	
Aerial Bombardment Manual—	
Part 1, Introduction and Preface	54
Part 2. Rules and Regulations	00
Part 3, Organization of Training Department and Ground Training for Pilots and Bombers Part 4, Flying Training for Pilots and Bombers	57
Part 5, Operations (Service Squadrons) and Appendix	58
Aerial Navigation Instructions, Provisional	82
Aerial Observation for All Arms	8
Aerial Observation for Target Practice at Fort Monroe, Va	14:
Aerial Tactics, Observation, Bombardment, Pursuit—Combat	88
Air Service Liaison Regulations— Part 1, General Liaison with Line and Other Units	8
Part 2. Liaison with Infantry	9
Part 3, Liaison with Artillery	9
Air Service Manual	8
Air Tactics	73
Characteristics, Limitations, and Employment of the Air Service	7
Corps Air Service, Field Manual, Provisional	7
Flying Training Regulations, Provisional	8
Manual of Aerial Photography	9
Meteorology and Aeronautics	7
Methods in Observation Practiced with Fifth Corps	11
Notes for Communications Officers—	
Provisional	7
Code Instruction	7
Vacuum Tubes	,8

Tasining Continued	Information Circular No.
Training—Continued. Pursuit and Combat Flying Training Regulations	
Pursuit Pilots	87
Recent Operations, General Principles, Corps and Army Observation, Pursuit, Day Bombardme	ent,
Balloons	<b>76</b>
Regulations for, Corps Air Service Operations Officers	86
Tactical History of Corps Observation Air Service, A. E. F.	75
Tactical Manual of Aerial Bombardment	140
Transcontinental, First Transcontinental Reliability and Endurance Test	2
Transport See "Airplane."	
Transport Wind Tunnel Test	533
Transverse Loads, Critical Loading of Structural Members Subjected to Combined Axial and Transv	erse
Loads	581
Treatise for Radio Mechanics	229
Treatment, Z-D Process for Treatment of Light Alloys to Inhibit Corrosion and to Minimize Porosit	ty 448
Trip. Report of General Mitchell's Inspection Trip	981
Truss Deflection. The Computation of, by the Method of Elastic Weights	620
Truss Ribs Design of Large Trussed Ribs	312
Truss Ribs. Experimental Reinforced Plywood	212, 268
Trussed Metal Spars for Single Bay Airplanes, Design of	621
Tube:	
Airplane Speaking Tube	67
Allowable Shear from Combined Bended and Torsion in Round Elliptical and Streamlined Tu	ıbes,
and Allowable Normal Stress from Bending in Thin Walled Tubes.	669
Allowable Stress in Tubes Subjected to Torsion	641
Spalding Voice Tube	108
Storage and Preservation of Rubber Goods, Tires, and Tubes	48
Tubing:	470
Column, Crushing and Torsional Strength of Duralumin Tubing	470 g 263
Effect of the Ratio of Diameter to Gage Thickness upon the Torsional Strength of Steel Tubin	g 20d
Physical Properties of Chrome-Molybdenum Steel Tubing	247
Thin-Walled Seamless Round and Streamline Steel Tubing	21
Type 1. See "Airplane."	
	545
Udylite Process, Cadmium Plating	01.
U. S. A. Airfoil. See "Airfoil." U. S. Engine, Model W-1, Carburetion, Heat Rejection, and Weight Data	36
U. S. Engine, Model W-1, Carburetion, near Rejection, and Weight Data	
U. S. XB-1-A. See "Airplane, XB-1-A." Universal Test Engine	4'
Universal lest Engine	
<b>v</b>	
V-40. See "Airplane."	
VCP-1. See "Airplane."	
VE-7. See "Airplane."	•
Valve Lift. Variation in Volumetric Efficiency of an Engine with Valve Lift.	35
Valves, Test of Monel Metal Valves in Liberty Single Cylinder Engine	
Vaporizing Device, Test of The Canton Electrical Vaporizing Device	12
Varnish, Requirements of Spar Varnish for Aircraft	49
Velocity Determination in McCook Field Wind Tunnel	20
Venturi Type Cowls and Engine Nacelles Suitable for Multi-Engine Airplanes, Wind Tunnel Tests	of 64
Verville Racer. See "Airplane."	•
Vibration:	
Determination of the Elastic Axis and Natural Periods of Vibration of the Atlantic C-2A M	lono-
plane Wing	64
Fatigue and Vibration of Metals	25
Vibration Characteristics of Aircraft Engine Crank-Shafts	66
Visualization of Air Flow.	14
Voice Tube, Spalding	10
Volumetric Efficiency, Variation in Volumetric Efficiency of an Engine with Valve Lift	35
Vortices-Tip, Shown by the McCook Field Wind Tunnel	26
Vought See "Airplane."	

w

W-1. See "Engine."	Information Circular No.
Walker Radial Engine, Standard Report	
Wasp. See "Engine."	
Water, Determination of Water in Gasoline	<b>32</b> 0
Water, Tables Showing the Freezing Points and Specific Gravity of Alcohol Water Mixtures	178
Weather Conditions in Transcontinental Reliability Tests	2
Web, Plywood Webs for Box Beams	
Weed Shackle (Modified) for Bomb Racks	305
Weight Estimate of Cantilever Monoplane Wings of Corrugated Aluminum Alloy Box-Type Cons	truc-
tion for Pursuit, Attack, Twin-Engines Observation and Transport Airplanes	662
Welding Process, Adaptability of Hyde Welding Process to Steel Engine Cylinder Construction	364
Weston Model 44 Electrical Tachometer Test	
Wheel and Tire:	
Special Airplane Wheel and Tire (and Supplement)	154
36 by 8 inch Straight-side	207
28 by 4 Straight-side Tire, One-Piece Rim	<b>27</b> 8
Wheels:	•
Airplane Tires and Wheels (see Addendum)	<b>3</b> 03
Comparative Speed Tests	676
Effect of Spoke Lacing on the Physical Properties of Airplane Wire Wheels	537
Shock-Absorbing, J. V. Martin, Static Test	254
Static Test on the Matériel Division 32 by 6 Disc Wheel	614
Static Tests on Standard Airplane Tires and Wheels	<b>2</b> 20
Wind Tunnel:	
Calibration Constant of Wright Field Five-Foot Wind Tunnel	643
Design of Intake Bell	217
Efficiency of McCook Field Wind Tunnel	169
McCook Field 5-Foot Wind Tunnel	
McCook Field Wind Tunnel	196
Wind Tunnel Test for Elevator Hinge Moment Coefficients on the Horizontal Tail Surface No. 5	WILLII
Balanced Elevator	567
Wind Tunnel Tests of:	603
DH-4B Model Fitted with Various Fins and Rudders	<b>6</b> 10
1/20 Scale Model of the Matériel Division Night Observation Airplane	612
Venturi Type Cowls and Engine Nacelles Suitable for Multi-Engine Airplanes	647
Wing Beams, Effect of Routing, Modulus of Rupture, and other Strength Properties	<b>2</b> 40
Wing Beams, Test on Wing Beams and Steel Tubing Taken from the Fokker D-VII	104
Wing Cellule, Wind Tunnel Test of 1/24 Scale Model of the Douglas O-2E-1 Airplane Cellule Thr	ough
360 Degrees	612
Wing Construction, Stress Analysis of an Airplane Cellule of the Multi-Spar Type	52
Wing Coverings	<b>25</b> 0
Wing Coverings, Effect of Climate	<b>3</b> 84
Wing Fittings	<b>3</b> 87
Wing Flap, Test of DH-4B Wind Tunnel Model	<b>5</b> 52
Wing Framework, Progress Report on the Study of Torsion on	<b>5</b> 84
Wing Gasoline Tanks, Covering Wing Gasoline Tanks in Martin Bomber	105
Wing Ribs:	
Design of Large Trussed Ribs	312
Experimental Reinforced Plywood Truss Ribs	268
Strength	443
Wing Section, Preliminary Choice of a Wing Section	117
Wings:	
Calculation of the Natural Frequency of a Cantilever Monoplane Wing	649
Charts for Solution of Stresses	555
Consolidated PT-3 Airplane Wing Cellule in High and Low Incidence	626
DH-4, Static Test	36
Design of Tapered, Internally Braced	599
Determination of the Elastic Axis and Natural Periods of Vibration of the Atlantic C-2A Mono Wing.	plane
Determination of Best Wing Loading for Single-Seater Pursuit Airplane	315

Č	aformation fircular No.
Vings—Continued.	318
	• •
Internally Braced Biplane Wings	440
Junker Biplane Load Distribution among the Spars in Multi-Spar Construction Load Distribution Load Distribution among the Spars in Multi-Spar Construction Load Distribution Load Distribu	394
- Am 1 D. fmones Test of Atlantic X CO-8	
as as it followed Webs of Roy Rooms	
- Lien of the Plactic Arig of the UNIVERSIGNIA AMOUNT AMOUNT AMOUNT AND A CONTRACT OF THE CONT	
C D. J J. Ci-con Distribution Studies of the Waterlet Division 00-1000 Calabia.	
Wing Wing Structure Built by the K	ey-
stone Aircraft Corporation  Static Test of the XHB-3 Experimental Two-Spar Wing Structure Built by the Keystone Aircr  Corporation  Corporation	
CorporationStudy of Wing Flutter, Part II	653
Study of Pressure Distribution Data	604
Study of Pressure Distribution Data———————————————————————————————————	635
Tests on Experimental 15-inch Metal Spars and 11-foot Chord Metal Wing Ribs	556
Tr. 1 m of the Felder PW-5 with the V-40 Wing and the FW-5 Wing	
TY . 1 D of Contiloyer Monoplane Wings of Corrugated Aluminum Andy Dox-1,700	
to Description and Transport Airplanes	
Wire, Effect of Zinc Plating on the Physical Properties of Streamline Wire	201
Wireless. See "Radio." Woods, Properties of Woods at 10 Per Cent Moisture	53
Wright See "Engine."	
A	
Xylidine, Elimination of Detonation by the Addition of Xylidine, Ortho-Toluidine, Benzol, and Ger Motors Anti-Knock No. 1	neral 319
Z	
Z-D, Process for Treatment of Light Alloys to Inhibit Corrosion, to Minimize Porosity, and to E	ffect
Z-D, Process for Treatment of Light Alloys to Inhibit Confesion, t	330
	39
4 4 7 1	
of Magnesium	20

#### NUMERICAL LIST

No.

Title of circular and Air Corps Library File No.

- \*1. Announcement. (D00.12/73.)
- 2. Report on First Transcontinental Reliability and Endurance Test. (C71.6/53.)
- 3. Air Medical Service; The Aviator's Heart; Roentgen Ray Studies Under Conditions Simulating High Altitude; Recent Work in Personality Study; The Effects of Smoking on Visual Acuity; A Device Adapting the Barany Chair to the Rebreathing Tests; Psychopathology Under Low Oxygen Tension; A Note on Oxygen Supply for Aviators; A Comparison of Two Methods of Applying Prism Tests to the Eyes; The Speed of Accommodation; Abstracts of the Literature on the Anatomy and Physiology of the Semicircular Canals; Cultivating the Balance Sense; The Changes in the Content of the Hemoglobin and the Erythrocytes of the Blood in Man During Short Exposures to Low Oxygen; Circulatory Responses to Low Oxygen Tension; A Test for the Judgment of Distance. (B63/6.)
- \*4. The Air Medical Service and the Flight Surgeon. (B63/7.)
- #\*5. Hispano-Suiza Engine, Model E and I, Ignition Timing Instructions and Chart; Dixie Type 800 Magneto. (D52.41 Hispano-Suiza/56.)
- \*6. Tentative List of Decorations Awarded United States Army Air Service, American Expeditionary Forces. (B00.5/11.)
- \*7. Enemy Aircraft Destroyed by United States Army Air Service. (B00.21/3.)
- \*8. Destructive Whirling Test of "Micarta" Propeller (Westinghouse) and Rubber-Covered Propellers with Hard and Soft Rubber Leading Edges. (D52.43/186.)
- \*9. Test of Monel Metal Valves in Liberty Single Cylinder Engine. (D52.41/Liberty/89.)
- \*10. Present Procedure in Static Testing of Airplane Engineering Division, United States Army Air Service. (D00.11/5.)
- \*11. Modified Hart Adjustable Pitch Propeller. (D52.43/189.)
- 12. "Micarta" Liberty Propeller. (D52.41/188.)
- \*13. Test of Various Types of Gasoline Hose Connections. (D52.4/2.)
- #\*14. Armament Test of Single Seater Pursuit Airplane. (D52.1/Orenco/2.)
- \*15. Parachute Tests of Model 300, D-1. (D52.9/91.)
- \*16. Time Study of the Movement of the Firing Mechanism of the 37 mm. Automatic Baldwin Cannon. (D72.2/34.)
- \*17. Comparative Merits of Dixie Magnetos and Delco Battery Ignition System When Used on Liberty "12" Aero Engine. (D52.41/Liberty/96.)
- 18. Test of the Alsop All-spark Ignition Device and Measurement of Distances. (D52.413/32.)
- \*19. Report of Test of French 37 mm. High Explosive Ammunition. (D72.2/32.)
- Effect of Reduced Engine Compression Pressure on Pre-Ignition with Mica Plugs. (D13.413/Spark Plug/42.)
- \*21. Aeronautical Book and Magazine List. (C13/53.)
- #22. Report of Preliminary Test of Bijur Ignition End Starting Motor for Liberty "12". (D52.41/Liberty/108.)
- \*23. Report of Static Test on DH-4 (Dayton-Wright) Tail Surfaces. (D52.1/DH.4/90.)
- \*24. Report on Tests of Modified Firing Mechanism for the Baldwin 37 mm Cannon. (D72.2/28.)
- #\*25. Report of Static Test of Wing Cellule of Pomilio PVL-8 with Unequal Loads on Right and Left Wings. (D52.1/Pomilio/10.)
- \*26. Report on Investigation of Silver Solder. (D10.1/66.)
- 27. Methods of Correcting the Longitudinal Balance of JN-6H Airplanes. (D52.1/Curtiss JN6/3.)
- \*28. Vibration Characteristics of the 300 Horsepower Hispano-Suiza Engine. (D52.41/Hispano-Suiza/70.)
- #\*29. Report of Static Test of Fokker Type D-VII Chassis. (D52.1/Fokker/30.)
- \*30. Report on Airplane Short Wave Radio Telephone Set. (D13.411/35.)
- \*31. Rate-of-Climb Indicators, Description and Theory. (D13.3/51.)
- \*32. Report of Test of 37 mm. Automatic Cannon in Cannon Engine. (D72.2/33.)
- #\*33. Report on Wind Tunnel Test of Laddon Night Pursuit Airplane. (D52.1/Laddon/1.)
- #\*34. Report of Static Test of the Fuselage of the DH-4 (Dayton-Wright). (D52.1/DH-4/92.)
- #\*35. Comparative Test of Special Homogeneous Gasoline and Commercial Aeronautic Gasoline. (D11.31/44.)
- #\*36. Report of Static Test of DH-4 (P-34) Wing Cellule. (D52.1/DH-4/91.)
- \*37. Performance Test of U. S. X. B. I.-A. with 300 Horsepower Hispano-Suiza Engine. (D52.1/U. S. X. B. I.-A/1.)

<sup>•</sup> Supply exhausted. Copies may be obtained on loan by Government activities from Air Corps Library, Office, Chief of the Air Corps.

‡ Obsolete but has a certain historical value. A limited number of copies will be available for loan to Government activities by the Air Corps Library, Office, Chief of the Air Corps.

No. Title of circular and Air Corps Library File No.

#\*38. Report of Static Test of the Landing Chassis of DH-4 (P-34). (D52.1/DH-4/86.)

\*39. Structural Weight Analysis of Airplanes. (D52.1/285.)

- \*40. Performance Test of Thomas-Morse MB-3 with 300 Horsepower Hispano-Suiza Engine. Thomas-Morse/22.)
- #\*41. Standard Engine Report on the Six-Cylinder Benz Aeronautic Engine Rated at 200 Horsepower at 1,400 Revolutions Per Minute. (D52.41/Benz/7.)
  - 42. Power Required to Drive Aeronautic Engine Magnetos and Generators. (D52.4/3.)

43. Report on Wind Tunnel Test of Messenger Airplane. (D52.15/131.)

- #44. General Descriptive Matter on Dopes and Instructions for the Application of Dope and Pigmented Protective Coverings. (D11.23/20.)
- \*45. General Descriptive Matter on Airplane Fabrics, Tapes and Cords, and Instructions for the Application of Fabric to the Wings. (D24.31/16.)
- #46. Aeronautic Gasoline, Specifications and Methods for Testing. (D11.31/19.)

\*47. Universal Test Engine. (D52.41/92.)

- \*48. Storage and Preservation of Rubber Goods, Tires and Tubes, Liberty Ignition System Instruction Board. (D00.22/6.)
- #\*49. Report of Wind Tunnel Test on United States Army Aerofoils 25, 26, 27, 28, 29. (D52.33/145.)
- #\*50. Performance Test of Loening Monoplane with 300 Horsepower Hispano-Suiza Engine. (D52.1/Loening/5.
- #\*51. Performance Test of Ordnance Type "D" with 300 Horsepower Hispano-Suiza Engine. (D52.1/Orenco/3.)
- \*52. Discussion of Stress Analysis of an Airplane Wing Cellule of the Multi-spar Type of Wing Construction, with Special Reference to the Loading Condition of the Standard Static Test. (D52.33/146.)

\*53. Properties of Woods at 10 per cent Moisture. (D11.1/139.)

54. Aerial Bombardment Manual, Part 1, Introduction and Preface. (C52.234/37-Part 1.)

\*55. Aerial Bombardment Manual, Part 2, Rules and Regulations. (C53.234/37-Part 2.)

- \*56. Aerial Bombardment Manual, Part 3, Organization of Training Department and Ground Training for Pilots and Bombers. (53.234/37-Part 3.)
- 57. Aerial Bombardment Manual, Part 4, Flying Training for Pilots and Bombers. (C53.234/37-Part 4.)
- 58. Aerial Bombardment Manual, Part 5, Operations (Service Squadrons) and Appendix. (C53.234/37-
- #\*59. Test Report of Marlin (7 M. G.), Model 1916, After Changes Were Made in Top Lock Container to Accommodate Single Shot Mechanism to be Used with Nelson Gun Control. (D72.1/Marlin/14.)
- \*60. Airplane Tachometers. (D13.3/Tachometers/6.) \*61. Testing of Airplane Tachometers. (D13.3/Tachometers/5.)

#\*62. Report on Air Fan Type FA-9. (D13.41/63.)

\*63. Report of Radio Generator Airfan Head Resistance Measurement. (D13.41/64.)

- #\*64. Standard Report on the 300 Horsepower Hispano-Suiza Aviation Engine with Steel Cylinders. (D52.41/ Hispano-Suiza/67.)
- \*65. Performance Test of U. S. X. B. I.-A. with 300 Horsepower Hispano-Suiza Engine Showing Improvement in Performance with Propeller X-19677. (D52.1/U. S. X. B. I.-A./1 Supp.)
- #66. Report on Foster Modification in Liberty Delco Switch Assembly. (D52.41/Liberty/192.)

\*67. Report of Airplane Speaking Tube. (D13.411/40.)

68. An Empirical-Theoretical Method of Comparative Prediction of Airplane Performance. (D52.15/91.)

69. Air Service Reserve Officers, April 15, 1920. (B10/30.)

\*70. Test of Crash-proof Tanks. (D52.44/54.)

- #\*71. Performance Test of Fokker D-VII with Liberty Six Engine. (D52.1/Fokker/33.)
  - 72. Notes on the Characteristics, Limitations, and Employment of the Air Service. (C70/30.)

\*73. Air Tactics, by H. E. Hartney, Lieutenant Colonel, Air Service. (C70/20.)

- 74. Corps Air Service, Field Manual (Provisional) Organization-Operations. (A00.1/11-Part I.)
- 75. Tactical History of Corps Observation, Air Service, American Expeditionary Force. (A00.1/11-Part II.)
- 76. Notes on Recent Operations, General Principles, Corps and Army Observations, Pursuit, Day Bombardment, Balloons. (C70/38.)
- \*77. Meteorology and Aeronautics, Location and Layout of Flying Fields, Exploration of Upper Air, Forecasts, Light Charts, Magnetic Declination Charts. (A40/18.)
- \*78. Notes for Communications Officers (Provisional). Wire Telephone, Radio Telephone, Wire Telegraph, Radio Telegraph, Radio Personnel and Terrestrial Station Equipment, Visual Signalling, Dropped Messages, Airplane Couriers, Mounted Couriers, Aerial Photography in Liaison, Carrier Pigeons, Unit Requirements for United States and Service Operations. (C11.2/19.)

Supply exhausted. Copies may be obtained on loan by Government activities from Air Corps Library, Office, Chief of the Air Corps. # Obsolete but has a certain historical value. A limited number of copies will be available for loan to Government activities by the Air Corps Library, Office, Chief of the Air Corps.

Title of circular and Air Corps Library File No.

79. Notes for Communications Officers (Code Instruction). (C10/15.)

\*80. Notes for Communications Officers (Vacuum Tubes), Provisional Electron Theory, Two-element Electron Tubes, Three-element Electron Tubes, the Oscillating Tube, Continuous Wave Reception, Amplification, Radio Telephony. (D13.411/37.)

\*81. Flying Training Regulations, Provisional, Curriculum of Flying Instruction for Flying Schools, Field and Air Rules, Organization of Flying Department, Method of Installing and Organizing a Flight, Records

and Reports. (C53.22/69.)

- \*82. Aerial Navigation Instructions, Provisional, Maps and Map Reading, Magnetism and the Compass, Setting the Course, Checking the Course, Navigation by Astronomical Observations, Cloud Flying. (D13.3/28.)
- 83. Pursuit and Combat Flying Training Regulations. Provisional Introduction, Course of Training Fighting Tactics. (C53.221/2.)
- \*84. Air Service Manual, Organization, General Principles, Security, Shelters, Marches and Convoys, Orders and Reports, Drills, Ceremonies, Parades, Inspections, Supply, Aerial Photography, Meteorology and Aeronautics, Cooperation with Antiaircraft Artillery, Formation Flying, Rules of the Airdrome and of the Air, Dropping of Supplies to Infantry Troops by Airplane, Aerial Navigation, Pursuit Aviation, Bombardment Aviation, Observation Aviation, Balloons. (C53/103.)

\*85. Aerial Observation for All Arms. Aerial Reconnaissance Cooperation of Air Service and Infantry, Cooperation of Air Service and Cavalry, Cooperation of Air Service and Tanks, Balloon Observation,

Aerial Photography. (C53/98.)

- 86. Regulations for Corps Air Service Operations Officers, Including Description of Divisional Corps Observation, Operations Room, Duties of Operations Officer for Squadron, Group, Corps. Relations with Engineer Officer and Adjutant. (C70/43.)
- 87. Notes for Pursuit Pilots. Manual for Flight Commander, Night Pursuit Pilot, Pursuit Pilot, Two-seater Pursuit Pilot, Two-seater Pursuit Gunner. (C53/101.)
- \*88. Aerial Tactics. Observation (Army and Corps) Bombardment (Day and Night), Pursuit-Combat (Pursuit-Attack). Includes Information, Liaison, Security, Orders and Reports, Marches and Convoys, Group Organization, Squadron Organization, Preliminary Training at the Front, Missions, Raids, Combat. (C70/3.)
- 89. Air Service Liaison Regulations, Part I, Liaison with the Line between Flying Units, between Army Air Service and A. A. Artillery, Searchlight Engineers, Observation Balloons, Plans of Employment, Field Orders, Battle Orders, Telephone Liaison, Radio Liaison, Reports. (C11.1/21.)

\*90. Air Service Liaison Regulations, Part II, Liaison with Infantry. (C11.1/21.)

91. Not printed.

- 92. The Variation of Horsepower with Altitude. (D52.45/50.)
- 93. Index to Technical Reports of Engineering Division, Supply Group, Air Service, Nos. 1-1300, January, 1918-June, 1920. (C13/32.)
- #\*94. Report on Auxiliary Control for Use in Connection with the Airplane Radio Telephone Set, Type SCR-68. (D13.411/46.)
- \*95. Report of Control Cable Guide Running Test. (D52.39/76.)
- 96. Manual of Aerial Photography, Provisional; Value and Scope, Personnel, Routine of Work, Materials, Methods. (A30.2/12.)

97. Official Airplane Report Form. (D60.1/46.)

- 98. Report on Comparative Merits of Various Insignia. (A81/34.)
- 99. Air Medical Service, Operation of the Medical Division of the Air Service Since the Signing of the Armistice, A New Type of Rebreather and Other Respiratory Apparatus, The Psychological Effect of Oxygen Deprivation, Cardio-Vascular Rating as a Measure of Physical Fatigue and Efficiency; Dark Adaptation, with Special Reference to the Problems of Night Flying, Contribution to the Study of Dark Adaptation, Maddox Rod and Screen Test Combined, Respiratory Volumes of Men During Short Exposures to Constant Low Oxygen Tensions Attained by Rebreathing, Alveolar Air, Respiratory Volume at Low Oxygen Tensions, Compensatory Reactions to Low Oxygen, The Reactions of the Cardiac and Respiratory Centers to Changes in Oxygen Tension, Relation of the Sighting Eye to the Measurement of Heterophoria, Consideration of Some Tests for Determining the Sighting Eye, Maddox Multiple Rod: A Consideration of Its Optical Defects, A New Apparatus for Testing Accommodation, Stereomicrometer, Judgment of Distance with Sempahores and a Screen at One Hundred Meters, Note on the Low-Pressure Chambers Installed in the Medical Research Laboratory of the Air Service. (B63/7.)
- 100. Index to Information Circulars 1-100. (Superseded by No. 677.)
- #101. Report of Physical Tests on K Bar Struts from JV-Martin Airplane. (D52.1/J. V. Martin/2.)

Supply exhausted. Copies may be obtained on loan by Government activities from Air Corps Library, Office, Chief of the Air Corps # Obsolete but has a certain historical value. A limited number of copies will be available for loan to Government activities by the Air Corps Library, Office, Chief of the Air Corps.

Title of circular and Air Corps Library File No.

- 102. A Method for Determining the Angular Setting of a Tail Plane to Give Balance at any Given Condition.
- 103. Report on Life of Wing Coverings Using Clear Dope. (D24.3/35.)
- #104. Report of Test on Steel Tubing and Wing Beams Taken from the Fokker D-VII. (D52.1/Fokker 36.) 105. Covering Wing Gasoline Tanks in Martin Bomber. (D52.1/Martin/14.)

- 106. Standard Altitude Chamber Test for Engines Submitted to the Bureau of Standards by the Engineering
- 107. Report on Wind Tunnel Test of Verville Racer. (D52.1/Verville/10.)

#108. The Spalding Voice Tube. (D13.411/42.)

#109. Report on Performance Test of Thomas Morse S-6 with 80 H. P. LeRhone Engine. (D52.1/Thomas

110. Report of Control Cable Guide Running Test. (D52.39/78.)

#111. Comparative Test of Auxiliary Starting Devices for the Liberty Engine. (D52.415/16.)

112. Ground Test of Cannon Turret Mount. (D72.21/5.)

- 113. Test of Second Shipment Braender Experimental Leakproof Tanks. (D52.44/62.)
- 114. Test of Five Thick-Walled Leakproof Tanks Supplied by Miller Rubber Company. (D52.44/61.)
- 115. Methods in Observation Practiced with Fifth Corps First American Army on the Fronts. (C71.2/31.)
- #116. Standard Test of Hercules Spark Plugs. (D52.413/Spark Plug/43.)
- 117. Preliminary Choice of a Wing Section. (D52.33/159.)
- #118. Lubricating Oils—Specifications and Method for Testing. (D11.2/14.)
- 119. Catalogue of Motion-Picture Films and Lantern Slides. (D13.511/5.)

120. Observation, Selection, and Assignment. (D11.2/14.)

- 121. Report of Tests on Shock Absorber Cord Submitted by Various Flying Fields and General Supply Depots. (D52.55/8.)
- 122. Standard Fifty-Hour Endurance Test of Three-Cylinder Lawrance Aviation Engine. (D52.41/Law-
- #123. Investigation of Physical and Chemical Properties of Aluminum and Aluminum Alloy Sheet-Part 1.

#124. Test of Revisions in Cooling Systems for Air-Cooled Cylinders. (D52.414/56.)

#125. Test of the Canton Electrical Vaporizing Device as Applied to a Zenith Carburetor. (D52.411/Zenith/19.)

126. Starting Torque on Liberty, Hispano-Suiza, and other Aviation Engines. (D52.415/17.)

- #127. Standard Engine Report of Hall-Scott Engine, Type L-6, Rated at 200 H. P. at 1,700 revolutions per minute. (D52.41/Hall-Scott/20.)
- #128. Report on X-B-A Cooling System Tests with 1,875 R. P. M. Propeller and 140 Square-Foot Radiator. (D52/414/57.)

#129. Report on Interphone—Type SCR-57, Remodeled. (D13.42/7.)

- #130. Standard 50-Hour Endurance Test of Packard Aviation Engine Model 1 A-1116. (D52.41/Packard/4.)
- #131. Torque Stand and Flight Test of Compression Relief Device on the 300-horsepower Hispano-Suiza Aviation Engine. (D52.41/Hispano-Suiza/86.)
- #132. Performance Test of Roland D-VI-B with 200-horsepower Benz Engine. (D52.1/Roland/5.)
- #133. Report on Test of Thomas Morse MB-3 Cooling System. (D52.1/Thomas Morse/28.)

134. Flight Test of Packard Fuelizer on Liberty "12." (D52.41/Liberty/196.)

- #135. Standard Fifty-Hour Endurance Test of Packard Model 1 A-744 8-Cylinder Aviation Engine. (D52.41/
- 136. Test of Thick-Walled Leak-Proof Tanks Supplied by Goodyear Tire & Rubber Co. (D52.44/63.)

137. Destructive Whirling Test of Aero Marine Propeller. (D52.43/270.)

- #138. Power Plant Laboratory Calibration of Six Cylinder 185-horsepower B. M. W. German Aviation Engine Prior to Test in the Altitude Chamber of the Bureau of Standards. (D52.41/B. M. W./5.)
- 139. Performance Test of Martin Torpedo Airplane Type M-T with Two 400-horsepower Liberty "12" Engines. (D52.1/Martin/16.)
- 140. Tactical Manual of Aerial Bombardment. (C53/234/40.)
- 141. Aerial Day Bombardment, Pilots and Observers. (C53/99.)
- 142. Aerial Observation for Target Practice at Fort Monroe, Va., During the Season Ending August 26, 1920. (C53.233/88.)
- 143. Report on Performance and Design of Five Representative Geared Aviation Engines. (D52.45/63.)
- #144. Report on Cooling System Test of Ordnance Model D, with 300-horsepower Hispano-Suiza Engine and Nose Radiator of 168 Square Feet. (D52.1/Orenco/7.)
- 145. Investigation of Steel Propeller X-14849. (D52.43/273.)
- 146. Report of Ground Test of 2.95-Inch Airplane Cannon in Martin Bomber. (D72.2/46.)

<sup>#</sup> Obsolete but has a certain historical value. A limited number of copies will be available for loan to Government activities by the Air Corps Library, Office, Chief of the Air Corps.

- Title of circular and Air Corps Library File No. No.
- 147. The Shift of the Angle of No-Lift on Propeller Aerofoils. (D52.43/11.)
- 148. Visualization of Air Flow. (F78/41.)
- #149. Fifty-Hour Endurance Run of Hall-Scott Model L-6 Aviation Engine. (D52.41/Hall-Scott/21.)
- #150. Design and Stress Analysis of Wings for PW-2 Night Pursuit Type. (D52.33/33.)
- #151. Report on the Delco Automatic Generator Cut-Out. (D52.413/34.)
- 152. Design of Standard Lugs. (D52.39/79.)
- #153. Performance Estimate of Spad 16-A with 236-horsepower Lorraine-Deitrich Engine. (D52.1/Spad/69.)
- 154. Report on Special Airplane Wheel and Tire. (D52.56/16.)
- 154. Supp. Supplement to Information Circular Vol. II, No. 154—Report on Special Airplane Wheel and Tire. (D52.56/16 Supp.)
- 155. Performance Test of DH-4 with 300-horsepower Hispano-Suiza Engine Showing Performance with Propeller X-19925. (D52.1/DH4/107.)
- #156. Report on Cooling System Flight Test of DH-4-B, with Hispano-Suiza 300-horsepower Engine and Nose Radiator of 170 square feet. (D52.1/DH-4/108.)
- 157. Standard Engine Report on the British 450-horsepower Napier-Lion Engine. (D52.41/Napier/12.)
- 158. Test of Stromberg Inverted Carburetor, Model NA-L5, on the 12-Cylinder Liberty Aviation Engine. (D52.41/Liberty/200.)
- #159. Test of Hispano-Suiza, Model K (Cannon Model), 300-horsepower 8-Cylinder Engine, Rated at 300 horsepower at 1,800 revolutions per minute. (D52.41/Hispano-Suiza/87.)
- (File 629.13/un3as.) \*160. Technical Orders No. 18.
- (File 629.13/un3as.) 161. Technical Orders No. 19.
- 162. Technical Orders No. 20. (File 629.13/un3as.)
- 163. Technical Orders No. 21. (File 629.13/un3as.)
- 164. Not printed.
- #165. Report on Low-Test Gasoline Specifications. (D11.31/46.)
- 166. Report on Wind-Tunnel Test of Armored Pursuit Airplane PG-1, Type IV. (F78/49.)
- #167. Standard Engine Report on ABC Wasp Radial Aeronautical Engine, Rated at 170 horsepower at 1,800 revolutions per minute. (D52.41/ABC/17.)
- 168. Test of Lucas Electric Engine Starter. (D52.415/18.)
- 169. Efficiency of McCook Wind Field Tunnel. (F78/45.)
- #170. Fifty-Hour Endurance Test of 300-horsepower Hispano-Suiza Aviation Engine at High Speeds. (D52.41/Hispano-Suiza/88.)
- 171. Report of Static Test of GAX-1 Chassis. (D52.1/G.A.X.1/6.)
- 172. Structural Design of Cabane Struts for the PW-1 with R. A. F. 15 Tapered Wings. (D52.333/63.)
- 173. Performance Test of Junker SL-6 with 185-horsepower B. M. W. Engine. (D52.1/JL6/4.)
- 174. Description and Adjustment of Prouty Oxygen Gas Apparatus. (D11.331/13.)
- #175. Instructions for Installing 85-A Mixture Control in Zenith US-52 Carburetors. (D52.411/Zenith/22.)
- #176. Performance Estimate of Vought E-8 with 300-horsepower Hispano-Suiza Engine. (D52.1/Vought VE--8/6.)
- #177. Test of Isotta-Fraschini 6-Cylinder Model V-6 Aviation Engine, Rated at 250 horsepower at 1,650 revolutions per minute. (D52.41/Isotta-Fraschini/11.)
- 178. Report Giving Tables Showing the Freezing Points and Specific Gravity of Alcohol-Water Mixtures. (D11.33/39.)
- 179. Report of Wind-Tunnel Test of the Effect of Rake Angle on Suction in Exhaust Stubs. (F78/44.)
- 180. Final Report of Chief of Air Service, A. E. F., to The Commander in Chief, American Expeditionary Forces. (C21/73.)
- \*181. Legal Questions Affecting Federal Control of the Air. (A00.5/58.)
- 182. Report on Test of Sample of Crystal-on and Preliminary Report on Nonfog-giving Treatment of Glass, Using Crystal-on, by the Navy Department. (D11.33/40.)
- #\*183. Airplane Performance and Design Charts. (D52.15/136.)
  - 184. The Use of Aerial Photographs in Topographic Mapping.
  - 185. Report on Radio-Equipped Automobile. (D13.411/50.)
- #186. Investigation of the Ballistic Properties of a Urano-Silico-Nickel Steel. (D10.11/61.)
- 187. Report on Performance of Tent Hangar Manufactured by Baker & Lockwood Manufacturing Company. (F34/51.)
- 188. Report on Performance of Tent Hangar Manufactured by the Missouri Tent & Awning Company. (F34/52.)
- #189. Test Report of Kellogg 600-Watt Reverse Current Relay. (D12.1/50.)
- 190. Test of Odier Portable Engine Starter. (D52.415/19.)

<sup>•</sup> Supply exhausted. Copies may be obtained on loan by Government activities from Air Corps Library, Office, Chief of the Air Corps. # Obsolete but has a certain historical value. A limited number of copies will be available for loan to Government activities by the Air Corps Library, Office, Chief of the Air Corps.

No. Title of circular and Air Corps Library File No.

#191. Standard Engine Report on Rausie Model E-6 Aviation Engine, Rated at 175-horsepower at 1,650 revolutions per minute. (D52.41/Rausie/1.)

192. Ten-Hour Endurance Test of Lawrance All-Aluminum Cylinder. (D52.417/3.)

#193. Performance Test of G. A. X. with Two 400-horsepower Liberty "12" Engines. (D52.1/G.A.X./7.)

194. Electrical Gun Synchronizer Test. (D72.13/19.)

195. An Analysis of the Effect of Supercharging. (D52.42/1.)

196. Description of the McCook Field Wind Tunnel. (F78/46.)

\*197. Airfoil Data on American and British Airfoils. (D52.33/177.)

198. Report of Wind-Tunnel Test on U. S. A. 27 Airfoil. (Supplement to Air Service Information Circular, Vol. I, No. 49.) (D52.33/145 Supplement.)

199. Test of a Standard Liberty Cylinder Mounted on a Universal Engine Crank Case. (D52.417/4.)

200. Index to Information Circulars 101-200. (Superseded by No. 677.)

#201. Investigation of Effect of Zinc Plating on the Physical Properties of Streamline Wire. (D52.313/11.)

202. Velocity Determination in McCook Field Wind Tunnel. (F78/47.) #203. Report on Investigation of Dip Brazing with 80-20 Brass. (D10.16/1.)

#204. Supplementary Report on Interphone Type SCR-57, Remodeled. (D13.42/7, Supplement.)

205. Standard Engine Test of Almen "Barrel" Type Engine. (D52.41 Almen/1.)

#206. Cooling System Flight Test of Loening M-8. (D52.1/Loening/7.) 207. Report on 36 x 8 Inch Straight-side Tire and Wheel. (D52.54/1.)

#208. Investigation of Physical and Chemical Properties of Aluminum and Aluminum-Alloy Sheet, Part II.

#209. One Hundred Hour Endurance Flight Test of Model 1-A Brewster-Goldsmith Spark Plugs. (D52.413/

210. Notes on Airplane Flight Endurance (I). (D52.15/140.)

211. Preliminary Report on Investigation of Methods for Preventing the Corrosion of Metal Parts of Air-

212. Experimental Reinforced Plywood Truss Ribs. (D52.332/18.)

213. Deflection of Beams of Nonuniform Section. (D52.16/17.)

214. Operating Tests of Magnetically Operated Starting Switches. (D52.415/20.)

215. Report of Ground Test of Baldwin 37-Millimeter Cannon Mounted on DH-4 Fuselage. (D72.2/47.)

216. The Use of Commercial Low-Test Automobile Gasoline in Aviation Engines. (D11.31/45.)

217. Experiments on the Design of Intake Bell for a Wind Tunnel. (F78/48.)

#218. Report on the Performance of the 5.5-inch by 6.5-inch Smith Cylinder Unit. (D52.417/5.)

#219. Performance Estimate of LePere G. H. 11 Equipped with 400 H. P. Liberty "12" Engine. Estimated by means of "Airplane Performance and Design Charts" as Outlined in Air Service Information Circular, Vol. II, No. 183. (D52.1/LePere/24.)

220. Results of Static Tests on Standard Airplane Tires and Wheels. (D52.54/2.)

#221. Performance Estimate of Pomilio FVL-8 Equipped with 8-Cylinder Liberty Engine. Estimated by means of "Airplane Performance and Design Charts" as Outlined in Air Service Information Circular, Vol. II, No. 183. (D52.1/Pomilio/14.)

222. A Metallurgical Report on Materials used in Foreign Aeronautical Engines. (A50/7.)

#223. Induction System Pressures in Liberty Twelve and 300 H. P. Hispano-Suiza Aeronautical Engines.

224. Report of Wind-Tunnel Test of USA 27A, B, and C Airfoils. (D52.33/180.)

225. PW-1. U. S. A. 27 Wings. (Appendix to Air Service Information Circular, Vol. II, No. 150, entitled "Design and Stress Analysis of Wings for PW-2. Night Pursuit Type.") (D52.33/33, Appendix.)

226. Report of Ground Test of Coventry 37-MM. Mark III Airplane Cannon. (D72.2/48.)

#227. Operating Liberty "12" and Wright-Hispano 300-H. P. Engines on Automobile Gasoline. (D52.41/114.) 228. Report of Static Test of Wing Structure of U. S. GAX-1 (Type VI). (D52.1/G. A. X./9.)

\*229. A Treatise for Radio Mechanics. (C53.236/31.)

230. Investigation of Junker Biplane Wings. (D52.1/Junker/20.)

\*231. Report of the Medical Research Laboratory and School For Flight Surgeons for the Calendar Year 1920.

232. Test of Airplane Engine Heater. (D52.419/66.)

#233. Report of Cooling System Flight Test of the Fokker D-VII with Mercedes Engine. (D52.1/Fokker/48.) 234. Investigation of the Ballistic Properties of a Special Case-Hardening High Chrome-Nickel Light Armor

#235. Investigation of Physical and Chemical Properties of Aluminum and Aluminum-Alloy Sheet, Part III. Duralumin Sheet. (D10.13/58/Part III.)

<sup>•</sup> Supply exhausted. Copies may be obtained on loan by Government activities from Air Corps Library, Office, Chief of the Air Corps. # Obsolete but has a certain historical value. A limited number of copies will be available for loan to Government activities by the Air Corps Library, Office, Chief of the Air Corps.

No. Title of circular and Air Corps Library File No.

- 236. Canceled.
- 237. Air Medical Service. (B63/14.)
- 238. Report on Semiportable Radio Direction Finder, Type SCR-142. (D13.41/84.)
- 239. The "1920" Model Hart Reversible Propeller Manual and Parts List. (D52.43/355.)
- 240. Investigation of the Effect of Routing Wing Beams on Modulus of Rupture and other Strength Properties. (D52.33/189.)
- 241. Report on Cooling System Tests of DH-4 Airplane equipped with Experimental Auxiliary Radiator in the Propeller Slipstream. (D52.1/DH-4/111.)
- #242. Investigation of Cork and Air Spacing of Light'Armor Plate. (D72.5/7.)
- 243. Calibrtaion of Carburetor Jet Flow. (D52.411/27.)
- #244. Report of Wind Tunnel Test on U. S. A. Airfoils 30, 31, 32, 33, and 34. (D52.338/14.)
- #245. Report on Cooling System Flight Tests of the VCP-1 with Annular Radiator. (D52.1/Verville/13.)
- 246. Metal Tipping of Aircraft Propellers. (D52.43/358.)
- 247. Investigation of Thin-Walled Seamless Steel Tubing, Round and Streamline. (D52.333/65.)
- #248. Report of Wind Tunnel Test on R. A. F. 19, Springer No. 3, and Gottingen No. 244. (D52.33/188.)
- #249. Report on Standard Test of the A. C. Spark Plugs. (D52.413/Spark Plug/51.)
- 250. Preliminary Report on Comparison of Protective Airplane Wing Coverings. (D11.23/83.)
- #251. Standard Report on Walker Radial Engine. (D52.41/Walker/1.)
- #252. Standard Engine Report on ABC "Dragonfly" Aviation Engine Rated at 320 H. P. at 1,650 R. P. M. (D52.41/ABC/18.)
- 253. Tests of Carbic Night Landing Lights. (D13.46/37.)
- 254. Report of Static Test on the J. V. Martin Shock-Absorbing Wheels with the Curtiss JN-4 Chassis. (D52.56/3.)
- #255. Investigation of Fatigue and Vibration of Metals. Part I. Tests on the Upton-Lewis and Farmer Machines. (D10.1/70.)
- 256. Instructions for the Storage of Airplanes, Engines, Their Parts and Accessories. (D00.22/8.)
- 257. Instructions to Pilots for the use of Mixture Controls. (D52.416/7.)
- 258. Vacuum Nonfrosting Goggles. (D26.1/22.)
- 259. Investigation of Crushing Strength of Spruce at Varying Angles of Grain. (D11.1/164.)
- 260. The Economic Limit in Aspect Ratio of Single-Bay Pursuit Biplanes. (D52.1/341.)
- Performance of the Twelve-Cylinder Liberty Engine with a Compression Ratio of 6.5 to 1. (D52.41/ Liberty/215.)
- 262. Tip-Vortices Shown by the McCook Field Wind Tunnel. (F78/52.)
- 263. Investigation of the Effect of the Ratio of Diameter to Gage Thickness upon the Torsional Strength of Steel Tubing. (D10.11/63.)
- #264. Report on Cooling System Test of Martin Bomber MB-2 "P-162." (D52.1/Martin/18.)
- #265. Report on Tests of A. B. C. "Dragonfly" Cylinder. (D52.41/A. B. C./19.)
- 266. Report of Static Test of Curtiss Night Pursuit Airplane, Type II. (D52.15/149.)
- #267. Report of Wind Tunnel Test on Gottingen No. 227 Aerofoil. (D52.338/16.)
- 268. Supplementary Report on Experimental Reinforced Plywood Truss Ribs. (D52.332/18, Supplement.
- #269. Test of Packard 12-Cylinder Model 1A-2025 Aviation Engine Rated at 550 H. P. at 1,800 R. P. M. (D52.41/Packard/8.)
- #270. Report of Static Test on Engineering Division Messenger Airplane. (D52.1/344.)
- #271. Report on Cooling System Flight Test of DH-4-C as Furnished by the Packard Motor Car Company. (D52.1/DH4/116.)
- #272. Fifty-hour Endurance Test of Curtiss Model C-6 Aviation Engine. (D52.41/Curtiss/22.)
- #273. Report on Standard Test of Mosler Spark Plugs, Model M-1. (D52.413/Spark Plug/52.)
- #273. Supplement. Changes in Information Circular, Volume III, No. 273. Report on Standard Test of Mosler Spark Plugs, Model M-1. (D52.413/Spark Plug/52.)
- 274. Report on the Corrosion Prevention of Metallic Aircraft Parts. (D11.2/18.)
- 275. Investigation of Methods of Making Manganese Bronze Castings to meet Air Service Specification No. 11021. (D10.16/2.)
- 276. Tests on Combined Loading of Wooden Struts. (D52.333/66.)
- 277. Laboratory Test on Hartmann & Braun Electric Thermometer. (D13.3/Thermometer/8.)
- 278. Report on Special Airplane Wheel and Tire (28 x 4 Straight-side Tire, One-Piece Rim.) (D52.56/18.)
- #279. Fifty-hour Endurance Test of Model "H" 300 H. P. Hispano-Suiza Engine with Cracked Crankcase. (D52.41/Hispano-Suiza/99.)
- 280. Performance Test of Messenger Airplane equipped with 3-Cylinder 60 H. P. Lawrance Engine. (52.1/354.)

<sup>#</sup> Obsolete but has a certain historical value. A limited number of copies will be available for loan to Government activities by the Air Corps Library, Office, Chief of the Air Corps.

- No. Title of circular and Air Corps Library File No.
- #281. The Sylphon Fuel Pump for Liberty "12" and Wright Model "H" Engines. (D52.46/28.)
- #282. Fifty-Hour Endurance Flight Test of Delco Automatic Generator Cut-Out. (D52.413/35.)
- 283. Report of Test of Cannon Ring Mount Type "A". (D72.21/8.)
- 284. Performance of the Packard Model 1A-1116 Aviation Engine with 6½:1 Compression Ratio. (D52.41/Packard/9.)
- 285. Performance Test of Morane Saulnier Type A. R. Airplane with Two sets of Wings Equipped with 80-H. P. LeRhone Engine. (D52.1/Morane Saulnier/17.)
- 286. Performance Test of Spad 13 Equipped with 220-H. P. Wright Engine. (D52.1/Spad/76.)
- 287. Performance Test of DH-4 with 400-H. P. Liberty "12" Engine, Equipped as Two-Seater Corps Observation Airplane. (D52.1/DH4/119.)
- #288. Official Performance Test of Fokker Monoplane D-VIII Equipped with 110-H. P. Oberursel Engine. (D52.1/Fokker/55.)
- 289. Comparative Effect on Engine Operation in Flight of Outside and Inside Air Intakes. (D52.45/74.)
- 290. Official Performance Test of Martin Bomber N. B. S.-1 Equipped with Two 400-H. P. Liberty "12" Engines. (D52.1/Martin/21.)
- #291. Instructions to Designers of Aircraft Carburetors. (D52.411/30.)
- 292. Report on the Control of Carburetor Metering Characteristics by the Supplementary Admission of Air. (D52.411/29.)
- 293. Comparative Flight Performance of Liberty Engines Equipped with 5.42 and 6.5 Compression Ratios. (D52.41/Liberty/219.)
- #294. Cooling System Test of the Curtiss JN-6 with Packard 1A-744 Engine Equipped with Side Radiators. (D52.1/Curtiss/JN-6/5.)
- #295. Report on Cause of Cracking of Alloy Steels During Dip Brazing. (D10.11/69.)
- #296. Performance Estimate of Huff-Daland Biplace Training Plane, Equipped with 170-H. P. A. B. C., Wasp "7" Engine. Estimated by means of "Airplane Performances and Design Charts" as Outlined in Air Service Information Circular, Vol. II, No. 183. (D52.1/Huff-Daland/4.)
- #297. Investigation of Dip Brazing with High Melting Point Brass. (D10.16/3.)
- 298. Investigation of Some Solders for Aluminum. Part I. (D10.13/68.)
- #299. Cooling System Test of LePere P-70 Equipped with Side Radiators. (D52.1/LePere/30.
- 300. Index to Information Circulars 201-300. (Superseded by No. 677.)
- 301. Liberty Storage Battery Endurance Test (Power Plant Section Report). (File D52.41/Liberty/225.)
- #302. Fifty-hour Endurance Flight Test of Auxiliary Starting Device (Buzzer Starter) for the Liberty Engine (Power Plant Section Report). (File D52.415/23.)
- 303. Discussion of Airplane Tires and Wheels (Material Section Report No. 150). (File D52.56/17.)
- 303. Addendum to Information Circular, Vol. IV, No. 303, Discussion of Airplane Tires and Wheels (Material Section Report). (File D52.56/17/Addendum.)
- 304. Nomographic Column Charts (Airplane Section, S. & A. Branch). (File D52.16/31.)
- 305. Report on Modified Weed Shackle. (D72.33/85.)
- #306. Performance Test of Production Orenco "D," Built by the Curtiss Aeroplane & Motor Corporation, Equipped with Wright 300-H. P. Engine (Performance Test Report No. 68). (File D52.1/Orenco/9.)
- 307. Comparative Study of Type I Airplanes with Various Power Plants (Airplane Section Report). (File D52.45/77.)
- 308. Investigation of the Effect of Doped Fuels on Fuel System (Material Section Report No. 152). (File D52.416/9.)
- #309. Test to Improve Fuel-Consumption Characteristics of the Stromberg Type NA-D6 Carburetor on the 300-H. P. Hispano-Suiza Engine (Power Plant Section Report). (File D52.41/Hispano-Suiza/102.)
- #310. Performance Test of Fokker D-VII Equipped with Packard 1237 Engine (Performance Test Report No. 69). (File D52.1/Fokker/58.)
- 311. The Determination of a Carburetor Setting for the Liberty Engine for Dirigible Use (Power Plant Section Report). (File D52.41/Liberty/222.)
- 312. Design of Large Trussed Ribs (Airplane Section, S. & A. Branch). (File D52.332/21.)
- 313. Reinforced Ply-Wood Web Spars (Airplane Section, S. & A. Branch). (File D52.331/37.)
- #314. Instructions for Stromberg NA-L5 Double Venturi Inverted Type Airplane Carburetor (Power Plant Section). (File D52.411/Stromberg/5.)
- 315. Determination of the Best Wing Loading for Single-Seater Pursuit Airplanes (Airplane Section, S. & A. Branch). (File D52.15/156.)
- 316. Test of Weston Model 44 Electrical Tachometer. (D13.3 Tachometer/12.)
- 317. Method for Estimating Power and Fuel Consumption of Normal Compression Aviation Engines in Flight at Various Altitudes (Power Plant Section Report). (File D52.45/82.)

<sup>#</sup> Obsolete but has a certain historical value. A limited number of copies will be available for loan to Government activities by the Air Corps Library, Office, Chief of the Air Corps.

Title of circular and Air Corts Library File No.

317. Changes No. 3.—Method for Estimating Power and Fuel Consumption of Normal Compression Aviation Engines in Flight at Various Altitudes. (File D52.45/82.)

318. Effect on Variation in Load Factor on Structural Weight of Wings (Airplane Section, S. & A. Branch). (File D52.33/200.)

#319. Report on the Elimination of Detonation with "Aviation" and "Motor" Gasoline by the Addition of Xylidine, Ortho-Toluidine, Benzol, and General Motors Anti-Knock No. 1 (Power Plant Section Report). (File D11.3/26.)

320. Determination of Water in Gasoline as Received, Exposed to Atmosphere, to Humid Atmosphere, and Saturated with Water (Material Section Report No. 156). (File D11.31/49.)

#321. Report of Wind Tunnel Test of Corps Observation CO-1 Model (Airplane Section, S. & A. Branch). (File D52.1/373.)

#322. Report of Static Test of Ski for an SE-5 Airplane (Airplane Section, S. & A. Branch). (File D52.1/S. E.

#323. Report on Airplane Radio Receiving Set, Type SCR-59, Remodeled (Equipment Section Test Report). (File D13.411/57.)

#324. Fifty-hour Endurance Test of Rausie E-6 Aviation Engine (Power Plant Section Report). (File D52.41/ Rausie/3.)

#325. Standard Engine Report of Aeromarine Model U-8-D Aviation Engine Rated at 180 Horsepower at 1,750 Revolutions Per Minute (Power Plant Section Report). (File D52.41/Aeromarine/3.)

#326. Fifty-hour Endurance Run of Model W-1 Engine (First Experimental Model) (Power Plant Section Report). (File D52.41/W-1/2.)

327. Comparative Performance Test of X. B. I.-A Equipped with High Compression Wright Model "H" and Packard 1237 Engines (Performance Test Report No. 67). (File D52.1/371.)

328. Report of Wind Tunnel Tests on Aerofoils; Dayton-Wright Nos. TT-1 and TT-2, Dayton-Wright Nos. 5 and 6, and Gottingen No. 387 (Airplane Section, S. & A. Branch). (File D52.338/31.)

329. Standard Engine Report on Curtiss Model C-6 Aviation Engine Rated at 160 Horsepower at 1,750 Revolutions Per Minute (Power Plant Section Report). (File D52.41/Curtiss/23.)

330. Standard Engine Report on Curtiss 12-Cylinder Model C-12, Geared Aviation Engine, Rated at 400 H. P. at 2,250 Revolutions Per Minute (Engine Speed) (Power Plant Section Report). (File D52.41/ Curtiss/24.)

331. Not Printed.

332. Study of Stress Analysis of the JL-6 (Airplane Section, S. & A. Branch). (File D52.1/J. L. 6/7.)

333. Report of Test of 300-H. P. Hispano-Suiza Model H Engine Fitted with Pistons Which Give a 6.5:1 Compression Ratio. (D52.41 Hispano-Suiza/103.)

334. Report on Wind Tunnel Test of U.S. A.-27-C Modified Airfoil (Airplane Section, S. & A. Branch). (File D52.338/33.)

#335. Investigation of Forged and Cast Brass (Material Section Report No. 158). (File D10.16/5.)

336. Effect of Fuel Head at Carburetor, on Brake Horsepower and Brake Specific Fuel Consumption (Power Plant Section Report). (File D11.31/50.)

337. The Economical use of Duralumin as a Substitute for Steel in Compression (Airplane Section, S. & A. Branch). (File D10.13/69.)

#338. Report of Static Test of XB-1-A Fuselage (Airplane Section, S. & A. Branch). (File D52.1/U. S. B. 1.A/5.

339. Temperature Effect on Capillaries of Liquid and Vapor Pressure Thermometers (Equipment Section Test Report). (File D13.3/Thermometers/10.)

340. Statistics Compiled from Reports on Crashes in the U.S. Army Air Service During the Calendar Years 1918-1921, Inclusive, and Results of Physical Examinations for Flying During the Calendar Years 1920 and 1921. (File B70/102.)

341. Description of McCook Field 5-Foot Wind Tunnel (Airplane Section, S. & A. Branch). (File F78/59.)

342. Report of Test of Davis 3-Inch Nonrecoil Cannon Mounted in Martin Bomber (Armament Section Report). (File D72.1/Davis/2.)

343. Not Printed.

#344. Report on the Performance of the Wright Model H-2 "Superfighter" Engine (Power Plant Section Report). (File D52.41/Wright/2.)

#345. Report on Blower Used in Tests of Air-Cooled Cylinders (Power Plant Section Report). (File D52.419/103.)

346. Fuel Consumption Test of DH-4B with Liberty "12" Engine (Flight Test Report No. 77). (File D52.1/DH-4/125.)

<sup>#</sup> Obsolete but has a certain historical value. A limited number of copies will be available for loan to Government activities by the Air Corps Library, Office, Chief of the Air Corps.

- vo. Title of circular and Air Corps Library File No.
- 347. Technical Orders No. 22. (File 629.13/un3as.)
- 348. Technical Orders No. 23. (File 629.13/un3as.)
- 349. Technical Orders No. 24. (File 629.13/un3as.)
- 350. Technical Orders No. 25. (File 629.13/un3as.)
- 351. Technical Orders No. 26. (File 629.13/un3as.)
- 352. Performance Test of Navy Vought Type XV Equipped with Wright Model E-2 Engine (Performance Test Report No. 73). (File D52.1/Vought/3.)
- 353. Reserve Bending Strength of Struts (Airplane Section, S. & A. Branch). (File D52.333/67.)
- 354. Variation in Performance of a Hispano-Suiza (Model E) Engine with Degree of Throttle Opening (Power Plant Section Report). (File D52.41/Hispano-Suiza/106.)
- 355. Report of Wind-Tunnel Test of DH-4B Model (Airplane Section, S. & A. Branch). (File D52.1/DH4/126.)
- \*356. Variation in Volumetric Efficiency of an Engine with Valve Lift (Power Plant Section Report). (File D52.41/124.)
- 357. Report on Test of Bijur Ignition End Starter for Airplane Engines (Equipment Section Report). File D52.415/29.)
- #358. Static Test of the Loening PA-1 Single-Seater Pursuit Airplane (Airplane Section, S. & A. Branch). (File D52.1/Loening/12.)
- #358. Addendum to Information Circular, Vol. IV, No. 358, Static Test of the Loening PA-1 Single-Seater Pursuit Airplane (Airplane Section, S. & A. Branch). (File D52.1/Loening/12/Addendum.)
- \*359. Air Medical Service. (File B63/16.)
- #360. Report of Static Test of the Junker L-6 Monoplane (Airplane Section, S. & A. Branch). (File D52.1/J. L. 6/8.)
- 361. Carburetion, Heat Rejection, and Weight Data of U. S. Model W-1 Engine (Power Plant Section). (File D52.41/W-1/3.)
- #362. Static Test of Thomas-Morse MB-6 Airplane (Airplane Section, S. & A. Branch). (File D52.1/Thomas-Morse/31.)
- 363. Heat Treating Bath Composed of Sodium Chloride, Sodium Carbonate, and Sodium Cyanide (Material Section Report No. 166). (File D50.1/7.)
- 364. Adaptability of the Hyde Welding Process to Steel Engine Cylinder Construction (Material Section Report No. 165). (File D00.57/2.)
- #365. Static Test of the Aeromarine PG-1 Airplane (Airplane Section, S. & A. Branch). (File D52.1/Aeromarine PG-1.)
- 366. Emergency Landings From Low Altitudes.—Minimum Altitude Required to Turn Back into Field in Case of Engine Failure After Take-Off (Flying Section Report No. 83). (File C71.6/152.)
- 367. Wind Tunnel Test of the Junker L-6 Monoplane (Airplane Section, S. & A. Branch). (File D52.1/Junker 6/10.)
- 368. Tests of Back-Suction and Air-Bleed Type Mixture Controls in Flight (Power Plant Section Report). (File D52.411/32.)
- #369. The Bellows (Sylphon) Fuel Pump for Liberty "12" and Wright Model "H" Engines (Supersedes Report of April 28, 1921, Entitled "The Sylphon Fuel Pump," and Published in Information Circular No. 281). (Power Plant Section Report.) (File D52.46/28.)
- #370. Test of a Zenith Carburetor, Model U. S. 52 Fitted with "Plain Tube" and Britton Type Discharge Nozzles (Power Plant Section Report). (File D52.411/Zenith/24.)
- 371. The Physical Properties of Manganese-Bronze (Material Section Report No. 175). (File D10.16/6).
- 372. Flight Test of Anti-Knock Injector (Power Plant Section Report). (File D52.419/106.)
- 373. Test of Curtiss Eight-Cylinder Model OX-5 Engine Rated at 90 Horsepower at 1,400 Revolutions Per Minute (Power Plant Section Report). (File D52.41/Curtiss/27.)
- \*374. Interior Corrosion of Steel Struts and its Prevention (Material Section Report No. 172). (File D11.2/27.)
- 375. Curves for Estimating the Fuel Consumption of An Aviation Engine on the Basis of Piston Displacement and Revolutions per Minute (Power Plant Section Report). (File D11.3/27.)
- 376. Methods of Making Aluminum Bronze Castings (Material Section Report No. 174). (File D10.16/7.)
- 377. Technical Orders No. 27. (File 629.13/un3as.)
- 378. Technical Bulletin (Formerly Technical Orders) No. 28. (File 629.13/un3as.)
- 379. Technical Bulletin (Formerly Technical Orders) No. 29. (File 629.13/un3as.)
- 380. Technical Bulletin (Formerly Technical Orders) No. 30. (File 629.13/un3as.)
- 381. Technical Bulletin No. 31. (File 629.13/un3as.)
- 382. Not issued.

<sup>•</sup> Supply exhausted. Copies may be obtained on loan by Government activities from Air Corps Library, Office, Chief of the Air Corps.

<sup>#</sup> Obsolete but has a certain historical value. A limited number of copies will be available for loan to Government activities by the Air Corps Library, Office, Chief of the Air Corps.

- IG. Title of circular and Air Corps Library File No.
- 383. The Effect of Doped Fuels on the Fuel System, Part II (Material Section Report No. 173). (File D52.416/9/.Pt. II.)
- \*384. Effect of Climate on Standard Airplane-Wing Coverings (Material Section Report No. 177). (File D24. 31/46.)
- #385. Investigation of Copper-Silicon-Aluminum Alloys with and Without Manganese (Material Section Report No. 178). (File D10.1/80.)
- 386. Performance Test of U.S. Mail DH-M2 (Performance Test Report No. 89). (File D52.1/D. H. M. 2/2.)
- \*387. Airplane Wing Fittings (Airplane Section, S. & A. Branch). (File D52.33/208.)
- #388. Static Test of the Dayton-Wright TA-3 Airplane (Airplane Section, S. & A. Branch). (File D52.1/Dayton-Wright/2.)
- #389. Pyrotechnic Projector and Ammunition Submitted By the Ordnance Department for Test (Armament Section Report). (File D70/64.)
- 390. Sediment Deposit in Carburetors (Material Section Report No. 183). (File D52.411/34.)
- 391. Report of Inspection Trip to France, Italy, Germany, Holland, and England, made during the Winter of 1921-1922, Technical Supplement. (File A10/166.)
- 392. Modified Mark I Airplane Flare (Armament Section Report). (File D13.47/21.)
- #393. Physical and Metallographic Properties of Copper-Zinc-Aluminum Alloys Containing Small Amounts of Magnesium (Material Section Report). (File D10.1/82.)
- 394. The Distribution of Load Among the Spars in Multi-Spar Construction of Airplane Wings (Airplane Section Report). (File D52.331/40.)
- \*395. Comparison of Column Formulas (Airplane Section Report). (File A10.23/177.)
- #396. Test of Machine-Gun Snychronizer Type C-8 (Armament Section Report). (File D72.13/49.)
- 397. Bamberg Speed-Measuring Station (Equipment Section Report). (File D13.3/89.)
- 398. Fuel Consumption During Climb—DH-4B with Liberty 12-A Engine and Form "D" Supercharger (Power Plant Section Report). (File D52.1/D.H.4/129.)
- 399. Test of Supercharger Air Coolers (Power Plant Section Report). (File D52.414/72.)
- 400. Index to Information Circulars 301-400. (Superseded by No. 677.)
- Investigation of the Effects on Cylinder Performance of Variation of Position and Number of Spark Plugs. (D52.417/13.)
- \*402. Aircraft Development Since the Armistice. (A10/169.)
- 403. Air Medical Service. (B63/7.)
- 404. Airways and Landing Facilities. (F10.3/53.)
- 405. Description of Carburetor Test Chamber and Method of Making Computations. (D52.411/35.)
- #406. Static Test of the Fokker PW-5, Type I, Airplane. (D52.1/Fokker/68.)
- #407. Performance Test of Huff-Daland TA-2, Equipped with Curtiss OX-5 Engine. (D52.1/Huff-Daland/8.)
- 408. Investigation of the Heat Treatment of Sand-Cast Duralumin. (D10.13/79.)
- 409. Impact Test of a JN-4 Tail Skid and Landing Chassis. (D52.1/Curtiss JN-4/35.)
- #410. Cooling System Flight Test of TW-1 Airplane. (D52.1/TW1/2.)
- #411. Performance Test of Huff-Daland TA-2, Equipped with Lawrance "R" Engine. (D52.1/Huff-Daland/9.)
- #412. Performance Test of G. Elias TA-1, Type XIV, Equipped with Lawrance R-9 Engine. (D52.1/G. Elias/2.)
- #413. Performance Test of Fokker D-IX, PW-6, Equipped with Wright H-2 Engine. (D52.1/Fokker/67.)
- #414. Performance Test of Fokker TW-4, Equipped with Curtiss OX-5 Engine. (D52.1/Fokker/66.)
- 415. Performance Test of Fokker CO-4, Equipped with Liberty "12" Engine. (D52.1/Fokker/65.)
- #416. Performance Test of Loening PW-2A, Equipped with Wright "H" 300-horsepower Engine. (D52.1/Loening/14.)
- #417. Static Test of the Gallaudet PW-4, Type I, Airplane. (D52.1/Gallaudet/3.)
- \*418. A Study of Controllability, Angular Velocity, and Dynamic Stability of an Airplane about the Axis of Pitch. (A10.23/135.)
- 419. The Pressure Distribution over the Stabilizer of the Vought VE-7 Airplane. (D52.1/Vought VE-7/23.)
- 420. An Investigation of the Structural Strength of the T-2 Transport, A. S. No. 64233. (D52.1/T2/3.)
- 421. Standard Method of Engine Calculations. (D00.11/29.)
- 422. Test to Determine Minimum Fuel Head to Operate Liberty "12" Engine on Propeller Load. (D52.41/ Liberty/244.)
- 423. Comparative Mathematical Analysis of the Stresses Occurring in the Cam-Shaft Drive Gears of the Liberty "12" and the Packard "2025" Engines. (D52.41/128.)
- #424. Static Test of Martin Bomber Elevator Controls. (D52.1/Martin/34.)
- 425. Technical Bulletin No. 32. (File 629.13/un3as.)
- 426. Technical Bulletin No. 33. (File 629.13/un3as.)

Supply exhausted. Copies may be obtained on loan by Government activities from Air Corps Library, Office, Chief of the Air Corps.
 # Obsolete but has a certain historical value. A limited number of copies will be available for loan to Government activities by the Air Corps Library, Office, Chief of the Air Corps.

```
No.
                                   Title of circular and Air Corps Library File No.
   427. Technical Bulletin No. 34.
                                  (File 629.13/un3as.)
   428. Technical Bulletin No. 35.
                                  (File 629.13/un3as.)
  429. Technical Bulletin No. 36.
                                  (File 629.13/un3as.)
  430. Technical Bulletin No. 37.
                                  (File 629.13/un3as.)
  431. Technical Bulletin No. 38.
                                  (File 629.13/un3as.)
  432. Technical Bulletin No. 39.
                                  (File 629.13/un3as.)
  433. Performance Test of Loening PW-2-B, Type I, Equipped with Packard 1237 High-Compression Engine.
         (D52.1/Loening/17.)
  434. Performance Test on Loening PW-2, Type I, Equipped with Wright 300 H. P. Engine. (D52.1/Loening/
         18.)
  435. Performance Test of N. B. S.-1 (Curtiss), Equipped with Two 400 Liberty "12" Engines. (D52.1/
         Curtiss NBS1/1.)
  436. Design Characteristics for Most Suitable Pursuit Airplanes. (D52.1/434.)
 #437. Static Test of the Cox-Klemin TW-2 Training Airplane, A. S. No. 68540. (D52.1/Cox-Klemin/1.)
 *438. The Effect of Eccentricities on Stresses in Airplane Spars. (D52.331/41.)
  439. The De Bothezat Barograph, Type "A." (D13.3/Barograph/3.)
  440. Design of Internally Braced Biplane Wings. (D52.33/217.)
 #441. Performance Test of Dayton Wright TA-3, Type XIV, Equipped with 80 LeRhone, Model "C." (D52.1/
         Dayton-Wright/3.)
  442. Development of Stromberg, Inverted Type Model NA-L5 Carburetors. (D52.411/Stromberg/7.)
  443. The Strength of Wing Ribs. (D52.332/23.)
  444. Report on Gliders. (D52.19/29.)
  445. Physical Properties of Chrome-Molybdenum Steel Tubing. (D10.1/93.)
 *446. Nomographic Column Charts. (D52.16/31.)
  447. Stress Analysis of the Model W-1 Engine. (D52.41/W-1/4.)
 #448. Investigation of the Z-D Process for Treatment of Light Alloys to Inhibit Corrosion, to Minimize Poros-
        ity, and to Effect Desired Physical Properties. (D10.1/105.)
 #449. Metallography of Sand Cast Aluminum Alloys. (D10.13/88.)
  450. Alcohol-Gasoline Mixtures. (D11.31/58.)
 451. Comparison Tests of Storage Preparations for Aviation Engine Storage of Less than Six Months.
         (D11.2/41.)
#452. Performance Test on Engineering Division CO-5 Airplane Equipped with Liberty "12" Engine.
        (D52.1/CO-5/1.)
 453. Wind Tunnel Test of CO-2A Model Airplane. (D52.1/CO2/2.)
 #454. Aileron Effectiveness. (D52.338/81.)
#455. Wind Tunnel Test of the Original TA-4 with the Following Airfoils: USA-27C Large; USA-27C Small;
        Gottingen 387; Gottingen 255. (D52.1/TA-4/2.)
#455. Appendix.—Appendix to Air Service Information Circular Vol. V, No. 455. Wind Tunnel Test of the
        Original TA-4 with the Following Airfoils: USA-27C Large; USA-27C Small; Gottingen 387;
        Gottingen 255. (D52.1/TA4/2/Appendix.)
 456. Performance Test on Fokker CO-4, Equipped with Liberty "12" Engine and Side Radiators. (D52.1/
        Fokker/76.)
 457. Performance Test on Fokker CO-4, Equipped with Liberty "12" Engine and Nose Radiators. (D52.1/
        Fokker/75.)
 458. The Bellows (Sylphon) Fuel Pump for Liberty "12" and Wright "H" Engines. (D52.46/28.)
#459. Index Air Service Orders and Circulars January 1, 1919, to December 31, 1923. (C13/109.) Superseded
        by Circular 5-1 OCAS, May 16, 1924.
 460. Performance Test of Boeing Pursuit, Type I, Equipped with Curtiss D-12 Engine. (D52.1/Boeing/3.)
 461. Economy Test of the DH-4. (D52.1/DH4/135.)
 462. Air Medical Service. (B63/23.)
#463. Wind Tunnel Test of the A-1 (Ambulance) Airplane. (D52.1/A1/1.)
 464. Engine Driven Gear Fuel Pumps Type "C." (D52.46/39.)
 465. Analysis of Some United States Gasolines. (D11.31/59.)
 466. Static Test of the Boeing (PW-9) Pursuit Airplane. (D52.1/PW9/1.)
 467. Wind Tunnel Test of the DB-1 Revised Airplane Model. (D52.1/DB1/1.)
468. Wind Tunnel Test of the Thomas-Morse MB-3 Airplane. (D52.1/Thomas-Morse/37.)
*469. Catalogue of Motion-Picture Films and Lantern Slides. (D13.511/5 Rev.)
*470. Column, Crushing, and Torsional Strength of Duralumin Tubing. (D52.313/20.)
```

<sup>•</sup> Supply exhausted. Copies may be obtained on loan by Government activities from Air Corps Library, Office, Chief of the Air Corps.
# Obsolete but has a certain historical value. A limited number of copies will be available for loan to Government activities by the Air Corps.
Library, Office, Chief of the Air Corps.

- No. Title of circular and Air Corps Library File No.
- \*471. An Investigation of the Movements of the Points of Inflection on Beams Under Various Combinations of Loads. (D52.331/45.)
- #472. Wind Tunnel Test of the PW-4 Airplane. (D52.1/PW4/1.)
- 473. Use of Balsa Wood in Plywood. (D11.1/193.)
- 474. Wind Tunnel Test of the Fokker PW-5 with the V-40 Wing and the PW-5 Wing. (D52.1/Fokker/83.)
- 475. Wind Tunnel Test of the Original DB-1 Model. (D52.1/Gallaudet DB1/3.)
- 476. Wind Tunnel Test of the GA-2A Ground Attack Airplane. (D52.1/GA-2A/1.)
- \*477. Wind Tunnel Test of Eight Model Fuselages. (D52.31/53.)
- \*478. Wind Tunnel Test of 36 by 6 Inch Airfoils. (D52.338/93.)
- \*478. Appendix.—Appendix to Air Service Information Circular Vol. V, No. 478, Wind Tunnel Test of 36 by 6 Inch Airfoils. (D52.338/93/Appendix.)
- 479. Official Performance Test of Boeing Pursuit PW-9 Equipped with Curtiss D-12 High Compression Engine. (D52.1/Boeing/5.)
- 480. Take-Off Characteristics of the DH-4. (D52.1/DH4/141.)
- 481. Technical Bulletin No. 40. (File 629.13/un3as.)
- 482. Technical Bulletin No. 41. (File 629.13/un3as.)
- 483. Technical Bulletin No. 41. Supplement. (File 629.13/un3as.)
- 484. Technical Bulletin No. 42. (File 629.13/un3as.)
- 485. Technical Bulletin No. 43. (File 629.13/un3as.)
- 486. Technical Bulletin No. 44. (File 629.13/un3as.)
- 487. Technical Bulletin No. 45. (File 629.13/un3as.)
- 488. Technical Bulletin No. 46. (File 629.13/un3as.)
- 489. Technical Bulletin No. 47. (File 629.13/un3as.)
- \*490. Technical Bulletin No. 48. (File 629.13/un3as.)
- #491. Static Test of the Fokker PW-7 Pursuit Airplane. (D52.1/Fokker/84.)
- 492. Static Test of the Curtiss PW-8 Single Seater Pursuit Airplane. (D52.1/Curtiss P.W.8/1.)
- 493. The Investigation of Structural Members Under Combined Axial and Transverse Loads. Section 1. (D52.16/63.)
- 493. The Investigation of Structural Members Under Combined Axial and Transverse Loads. Section II. D52.16/63/Sec. 2.)
- 494. Requirements of Spar Varnish for Aircraft. (D11.22/19.)
- 495. Application of the Method of Least Work to Redundant Structures. (D52.16/64.)
- 496. Official Performance Test of Curtiss PW-8A Equipped with 400 H. P. Curtiss D-12 Low Compression Engine. (D52.1/Curtiss P.W.8/3.)
- 497. Remedies for Machine Gun Malfunctions. (D72.1/40.)
- 498. Study of S. T. Ae Formula for Load Factors. (D52.33/2 53.)
- #499. Official Performance Test of Huff-Daland TW-5, Equipped with 180 H. P. Wright "E" Engine. (D52.1/Huff-Daland/16.)
- 500. Index to Information Circulars 401-500. (Superseded by No. 677.)
- 501. Wind Tunnel Test of the Curtiss PW-8 Pursuit Airplane. (D52.1/Curtiss P.W.8/5.)
- 502. Official Performance Test of Boeing PW-9, Equipped with Curtiss D-12 Low Compression Engine. (D52.1/Boeing/7.)
- 503. Not printed.
- 504. Instructions for Reinforcing Liberty Cylinders. (D52.41/Liberty/263.)
- 505. A Method Used by the Engineering Division of the Air Service for Computing the Horsepower Available from an Engine with a Two-Bladed Propeller. (D52.41/165.)
- 506. Official Performance Test of Atlantic AO-1, Equipped with 400 H. P. Liberty 12-Cylinder Engine (D52.1/Atlantic AO-1/1.)
- 507. Official Performance Test of Fokker CO-4, Equipped with Liberty 12-Cylinder Engine. (D52.1/Fokker/86.)
- #508. Static Test of the CO-6. (D52.1/CO-6/1.)
- 509. Official Performance Test of Douglas XO-2 Equipped with Liberty "12" Engine and Standard Steel Propeller Set at 18. (D52.1/Douglas/0.2/1.)
- 510. Flow of Air Around a Rotating Cylinder. (D52.417/16.)
- 511. Wind Tunnel Test of Six Horizontal Tail Surface Designs Having the USA-47 Airfoil Section. (D52.32/27.)
- 511. Supplement to Information Circular, Volume VI, No. 511, Wind Tunnel Test of Six Horizontal Tail Surface Designs Having the USA-47 Airfoil Section. (D52.32/27/Supp.)
- #512. Static Test of the DH-4-M2 Fuselage. (D52.1/DH-4/143.)

<sup>•</sup> Supply exhausted. Copies may be obtained on loan by Government activities from Air Corps Library, Office, Chief of the Air Corps.

<sup>#</sup> Obsolete but has a certain historical value. A limited number of copies will be available for loan to Government activities by the Air Corps Library, Office, Chief of the Air Corps.

- No. Title of circular and Air Corps Library File No.
- 513. Report of Torsional Test of Curtiss NBS-4 Fuselage. (D52.1/Curtiss NBS-4/3.)
- 514. Static Proof Test of the Aileron, Stabilizer, and Elevator of the Cox-Heinkel Observation Airplane, P-377. (D52.1/Cox Heinkel/1.)
- #515. Torsional Test of Martin Bomber NBS-1. (D52.1/Martin/37.)
- 516. The Design of Plywood Webs for Box Beams. (D52.331/47.)
- #517. Report of the Torsional Test of the G. Elias NBS-3 Fuselage. (D52.1/G. Elias/7.)
- #518. Static Test of the U.S. Air Mail Plane No. 509 (Bellanca D. H.). (D52.1/Bellanca/2.)
- 519. Static Test of the Engineering Division Experimental Steel Spar Designed by I. M. Laddon. (D52.331/48.)
- 520. Stress Analysis of Lieut. Phillips' "Alouette" Airplane. (D52.1/Alouette/1.)
- 521. Official Performance Test of Engineering Division XCO-6 Equipped with "12" Cylinder Inverted Liberty Engine. (D52.1 C.O.6/3.)
- 522. Official Performance Test of Atlantic XCO-8, Equipped with Loening Wings and Liberty "12" Engine. (D52.1/Atlantic XCO-8/1.)
- 523. First Full Throttle Endurance Test of Liberty Engine, Equipped with Various Experimental Materials (D52.41/Liberty/280.)
- 524. Report of Static Test of Aeromarine (Experimental) Duralumin Spar (2d Article). (D52.331/49.)
- 525. Comparison of Piston Side Thrust in the Modified R-1, 400 H. P. Radial Engine and Single Cylinder Test Engine. (D52.41/170.)
- 526. Official Performance Test of Consolidated PT-1, Equipped with 8-Cylinder Hispano I Engine. (D52.1/PT-1/1.)
- 527. Official Performance Test of Consolidated PT-1, Equipped with Wright E Engine. (D52.1/PT-1/2.)
- 528. Special Radiator Tests of DH-4 Airplane P-297. To Determine Best Location of Radiator to Give Maximum Speed. (D52.1/DH-4/145.)
- 529. Official Performance Test of Fokker PW-7, Equipped with Curtiss D-12 Low Compression Engine. D52.1/Fokker/87.)
- 530. Official Performance Test of Curtiss XO-1 Equipped with Liberty "12" Engine. (D52.I/Curtiss/41.)
- 531. Wind Tunnel Test of a Heavy Bomber Study 1/40 Scale Model with Large and Small Control Surfaces. (D52.1/Douglas/1.)
- 532. Wind Tunnel Tests of 36 by 6 inch Airfoils at Various Speeds. (D52.338/114.)
- 533. Wind Tunnel Test of Transport Study (Spec. No. 1571-A). (D52.1/Douglas/2.)
- #534. Official Performance Test of Engineering Division CO-5, Equipped with 12-Cylinder Liberty Engine. (D52.1/CO-5/3.)
- 535. Wind Tunnel Test of Aileron Characteristics as Affected by Design and by Airfoil Thickness. (D52.322/ 22.)
- 536. Official Performance Test of Douglas XO-2 Equipped with Packard "1500" Engine and Small Wings. (D52.1/Douglas/0.2/2.)
- 537. Effect of Spoke Lacing on the Physical Properties of Airplane Wire Wheels. (D52.56/26.)
- 538. Official Performance Test of Curtiss XO-1 Equipped with Packard "1500" Engine. (D52.1/Curtiss/42.)
- 539. Static Test of the Curtiss XO-1 Observation Airplane. (D52.1/Curtiss/43.)
- 540. Official Performance Test of Loening COA-1 Equipped with 12-Cylinder Inverted Liberty Engine. (D52.1/Loening/21.)
- \*541. Study of Wing Weights. (D52.33/260.)
- 542. The Clogging of Fuel Strainers. (D52.416/15.)
- 543. Practical Field Service Use of Oxygen. (D11.321/9.)
- 544. Dopes and Their Application. (D11.23/106.)
- 545. Cadmium Plating by Means of the Udylite Process. (D10.12/10.)
- 546. Official Performance Test of Douglas C-1 Transport Equipped with Liberty 400 H. P. Engine and Propeller No. 068891. (D52.1/Douglas/5.)
- 547. The Effect of Sweep Back and Sweep Forward on an Airfoil. (D52.338/116.)
- 548. Longitudinal Stability of Airplanes. (D52.151/17.)
- 549. Performance of Airspeed Tubes Exposed to Rain Drops and Freezing Rain. (D13.3/Indicators, Air Speed/55.)
- 550. Standard Engine Tests of Curtiss D-12 High and Low Compression Engines. (D52.41/Curtiss/42.)
- 551. First 50-Hour Test of the Air Cooled Liberty Engine. (D52.41/Liberty/296.)
- 552. Wing Flap Test of a DH-4B Wind Tunnel Model. (D52.1/DH-4/148.)
- \*553. A Simple Theoretical Method of Analyzing and Predicting Airplane Performance. (D52.151/18.)
- 554. Static Test of Douglas O-2 and Report on Static Proof Test of Horizontal Tail Surfaces. (D52.1 Douglas/0.2/4.)

Supply exhausted. Copies may be obtained on loan by Government activities from Air Corps Library, Office, Chief of the Air Corps.
 Dbsolete but has a certain historical value. A limited number of copies will be available for loan to Government activities by the Air Corps.
 Library, Office, Chief of the Air Corps.

- Vo. Title of circular and Air Corps Library File No.
- \*555. Charts for the Solution of Stresses in Airplane Wing Beams. (D52.331/56.)
- 556. Comparison of Tests on Experimental 15-inch Metal Spars and 11-foot Chord Metal Wing Ribs. (D52.33/264.)
- 557. Static Test of Kerber-Boulton Experimental Spar (2d Article). (D52.331/59.)
- 558. Method and Equipment for Cleaning and Testing Spark Plugs. (D52.413/Spark Plugs/68.)
- 559. Static Test of Consolidated Aircraft Co.'s PT-1 Airplane. (D52.1/PT-1/3.)
- \*560. Notes on Airplane Performance from the Standpoint of the Modern Conception of Drag. (D52.151/21.)
- 561. Pyroxylin Finishes for Aircraft. (D11.22/21.)
- 562. Enamels for Aircraft. (D11.2/57.)
- 563. Extracts from A. S. Information Circular, Vol. I, No. 3, Air Medical Service, Parts 6, 11, and 12. (B63/6-Pt. 2.)
- 564. Visual Study of Flow Discontinuity on 6 by 13 inch .15 Cylindrical Camber Airfoil. (D52.338/120.)
- 565. Index Information Circulars 1-565. (C13/117.) (Superseded by No. 677.)
- 566. International Aerial Regulations. (A00.51/5.)
- 567. Wind Tunnel Test for Elevator Hinge Moment Coefficients on the Horizontal Tail Surface No. 5 with Balanced Elevator. Suppl. Report 2463, 2600, McCook Field Serials. (D52.32/27/Suppl. 1926, Sept. 1.)
- 568. Study of Dural and Steel for Airplane Structure. (D10.1/143.)
- 569. Carburetor Metering Jet Calibration. (D52.411/41.)
- 570. Development and Test of Zenith ED-52 Carburetor for Liberty "12" Engine. (D52.411/Zenith/27.)
- 571. Comparative Flood Light Test. (D13.46/83.)
- 572. Development and Test of Stromberg NA-Y5D Carburetor for Curtiss D-12 Engine. (D52.411/Stromberg/16.)
- 573. Wind Tunnel Test of Clark Y, Clark Y-15, Clark Y-18, Clark Y-21, Gottingen 398 Airfoils, and S. T. Ae'-27a, 6-inch by 36-inch Airfoils, Tests Nos. 233, 234, and 237. (D52.338/123.)
- #574. 24-inch Revolving Incandescent Beacon, Air Corps Type B-3. Prepared by W. T. Harding. (D13.46/84.)
- 575. Technical Bulletin No. 49. (File 629.13/un3as.)
- 576. Technical Bulletin No. 50. (File 629.13/un3as.)
- 577. Not printed.
- 578. Not printed.
- 579. Not printed.
- 580. Strength of Bent Struts. (D52.333/80.)
- 581. Critical Loading of Structural Members Subjected to Combined Axial and Transverse Loads. (D52.16/74.)
- 582. Interference Tests on DH4B Model and Propeller. (D52.1/DH4/152.)
- #583. Handbook of Instructions for Airdrome Landing Field Flood Light, Type A-1. (D13.46/87.)
- 584. Progress Report on the Study of Torsion on Wing Framework. (D52.33/271.)
- #585. Silhouettes of Airplanes. (D52.1/505.)
- 586. Study of Balanced Rudders. (D52.325/12.)
- 587. Shear Strength of Plywood Webs of Box Beams. (D52.331/72.)
- 588. Inflammation Tests: Engine Cleaning Fluids. (D11.33/57.)
- 589. Power Plant Laboratory Standard Test Methods and Computation. (D52.41/146.)
- 590. Progress Reports on Experimental Metal Spars. (D52.331/64.)
- \*591. Precise Formulas For Restrained Beam with Axial Load of Compression, Equal End Moments and Two Symmetrically Placed Side Loads. (D52.16/37.)
- 592. Aircraft Fire Prevention. (D52.1/93.)
- 593. Aerodynamical Balance for P-1B and P-5 Airplanes by Standard Analytical Method for Determination of C. G. and M. A. C. (D52.1/Curtiss/52.)
- 594. Exhaust Equipment Temperature Determinations. (D52.419/144.)
- 595. Comparison of Flight Tests of a Number of Wood Propellers with Wind Tunnel Tests on a Series of Wood Propeller Models. (D52.43/130.)
- 596. Fire Hazard Tests of Ignition Equipment. (D52.413/44.)
- 597. Section Properties of a Series of Aerofoils Suitable for Propeller Design. (D52.338/138.)
- 598. Compression Strength of Duralumin Channels. (D10.13/125.)
- 599. Design of Tapered Internally Braced Wings. (D52.33/14.)
- 600. Index to Unrestricted U. S. Army Air Corps Information Circulars. (C13/117/1928/May 15.) (Superseded by No. 677.)
- #601. Flood Light, A-2 and A-3, Handbook of Instructions for Airdrome. (D13.46/89.)

Supply exhausted. Copies may be obtained on loan by Government activities from Air Corps Library, Office, Chief of the Air Corps.
 # Obsolete but has a certain historical value. A limited number of copies will be available for loan to Government activities by the Air Corps Library, Office, Chief of the Air Corps.

No. Title of circular and Air Corps Library File No.

- #602. Landing Gears, Determination of Stresses in Landing Gears and Design of Shock-Absorbing Units. (D52.5/31.)
- #603. Wind-Tunnel Tests of DH-4B Model Fitted with Various Fins and Rudders. (D52.1 D.H.4/118.)

604. Study of Pressure-Distribution Data. (D52.33/17.)

- \*605. Determination of Center of Gravity and Mean Aerodynamic Chord. (D-52.1/241.)
- #606. Handbook of Instructions for Airdrome Landing Field Flood Lights, Type A-4. (D13.46/23.)

607. The Induced Drag of Any Biplane. (D52.151/59.)

- 608. Wing-Flutter Investigation on Brady's Wind Tunnel Model. (D52.33/276.)
- 609. Effect of Cellule Arrangement on the Rate of Autorotation by the Strip Method. (D52.151/55.)
- 610. Observation, Wind-Tunnel Test of 1/20 Scale Model of the Matériel Division Night Observation Airplane. (D52.151/58.)
- 611. Aircraft Ignition, Recent Developments. (D52.413/46.)
- 612. Wind-Tunnel Test of 1/24 Scale Model of the Douglas O-2E-1 Airplane Wing Cellule through 360 Degrees. (D52.1 Douglas/12.)
- 613. Airplane Spinning Characteristics. (D52.151/65.)
- #614. Static Test on the Matériel Division 32 by 6 Disc Wheel. (D52.56/32.)
- #615. Study of Horizontal Tail Surfaces of Consolidated XPT-3(NY-1). (D52.1 Consolidated/5.)
- #616. Static Test of the XHB-3 Experimental Two-Spar Wing Structure Built by the Keystone Aircraft Corporation. (D52.1 Keystone/3.)
- #617. Static Test of the XHB-3 Experimental Three-Spar Monoplane Wing Structure Built by the Keystone Aircraft Corporation. (D52.33/26.)
- 618. Study of Fatigue of Metal Propellers Caused by Engine Impulses and Vibration, Preliminary. (D52. 43/450.)
- 619. Full-Scale Tests of Semi-Rigid Airship RS-1. (D52.72/64.)
- 620. The Computation of Truss Deflections by the Method of Elastic Weight. (D52.39/7.)
- 621. Design of Trussed Metal Spars for Single Bay Airplanes. (D52.331/68.)
- 622. Tests on 61/4-Inch Metal Spars. (D52.331/16.)
- 623. Flood-Light Test at Fairfield Air Depot, 1927. (D00.12/122/No. 2896.)
- \*624. Precise Formulas for Restrained Beam with Axial Load of Compression, and with One Restraining Moment Known. (D00.12/122/No. 2899.)
- 625. Determination of Stability from Flight Test Stick Force Data. (D52.32/4.)
- 626. Consolidated PT-3 Airplane Wing Cellule in High and Low Incidence. (D52.1 Consolidated/8.)
- \*627. Some Aspects of Torsion in Multispar Cantilever Wings. (D00.12/122/No. 2913.)
- 628. Determination of the Rates of Descent of a Falling Man and of a Parachute Test Weight. (D00.12/122/No. 2916.)
- 629. Determination of Structural Airplane Drag. (D00.12/122/No. 2919.)
- 630. Dynamometer Carburetion Runs on Curtiss GV-1570 Engines. (D00.12/122/No. 2918.)
- \*631. Revised Nomographic Column Charts with Isobars of Weight and Tensile Strength. (D00.12/122/No. 2922.)
- 632. Comparison of Wind-Tunnel Tests with Flight Tests on a Number of Detachable Blade Propellers Made From the Same Plan Form. (D00.12/122/No. 2943.)
- 633. Analysis of Aircraft Accidents. (D00.43/U.S./1.)
- 634. Application of the Least-Work Method to the Evaluation of Initial and Temperature Stresses. (D00.12/122/No. 2998.)
- 635. Study of Wing Flutter, Part 1. (D00.12/122/No. 3002.)
- #636. Static-Test Report of Type E-1 Airplane Ski. (D00.12/122/No. 3005.)
- \*637. Supplementary Report on Tests of 61/4-Inch Metal Spars. (D00.12/122/No. 2990.)
- 638. Test of Standard Water-Cooled Liberty-12 Engine with Various Piston Rings and Arrangements. (D00.12/122/No. 3006.)
- 639. Résumé of Investigations Made on Handley Page Slots and Flaps. (D00.12/122/No. 3020.)
- 640. Relationship of Laboratory Tests and Cold-Weather Motor Operation of Various Oils, Part II. (D00.12/122/No. 3058.)
- 641. The Allowable Stress in Tubes Subjected to Torsion. (D00.12/122/No. 3070.)
- 642. Rigidity and Flexibility of Airplane Structures. (D00.12/122/No. 3074.)
- 643. Calibration Constant of Wright Field Five-Foot Wind Tunnel. (D00.12/122/No. 3082.)
- 644. Miscellaneous Collected Airplane Structural Design Data Formulas and Methods. (D00.12/122/No. 3083.)
- 645. Determination of the Elastic Axis and Natural Periods of Vibration of the Atlantic C-2A Monoplane Wing. (D00.12/122/No. 3097.)

<sup>•</sup> Supply exhausted. Copies may be obtained on loan by Government activities from Air Corps Library, Office, Chief of the Air Corps.

# Obsolete but has a certain historical value. A limited number of copies will be available for loan to Government activities by the Air Corps Library, Office, Chief of the Air Corps.

- No. Title of circular and Air Corps Library File No.
- 646. Static Test and Determination of the Elastic Axis of the (Matériel Division) Improved Stressed Skin-Type Glider Wing. (D00.12/122/No. 3099.)
- 647. Wind-Tunnel Tests of Venturi Type Cowls and Engine Nacelles Suitable for Multi-Engine Airplanes. (D00.12/122/No. 3133.)
- 648. Instructions for Assembly of Detachable Blade Propellers. (D00.12/122/No. 3169.)
- 649. The Calculation of the Natural Frequency of a Cantilever Monoplane Wing. (D00.12/122/No. 3173.)
- 650. Proposed Method of Determining Design Tail Loads for Airplanes. (D00.12/122/No. 3148.)
- 651. Physical Characteristics of Parachute Cloth under Varying Atmospheric Conditions. (D00.12/122/No. 3228.)
- 652. Statistical Studies of Aircraft Accidents and Forced Landings. (B70/U.S./32.)
- 653. Study of Wing Flutter, Part II. (D00.12/122/No. 3237.)
- 654. Millivolt-Temperature Relation of the Standard Air Corps Iron-Constantin Thermocouple. (D00.12/122/No. 3280.)
- 655. Airplane Dopes, Doping, and Dope-Room Requirements. (D00.12/122/No. 3290.)
- 656. Test of Armstrong-Whitworth Steel Spars under Combined Axial and Transverse Loading. (D00.12/122/No. 3296.)
- 657. The McCollum-Peters Six-Element Telemeter Strain Gauge Set. (D00.12/122/No. 3313.)
- 658. Dynamic Test of Long-Stroke Oleo Strut with Compensating Valve. (D00.12/122/No. 3352.)
- 659. Effect of Ring-Type Engine Cowls on Model of Douglas XO-14. (D00.12/122/No. 3353.)
- 660. Aviation Gasoline. (D00.12/122/No. 3492.)
- 661. Aviation Engine Oil. (D00.12/122/No. 3493.)
- 662. Weight Estimate of Cantilever Monoplane Wings of Corrugated Aluminum Alloy Box-Type Construction for Pursuit, Attack, Twin-Engined Observation and Transport Airplanes. (D00.12/122/No. 3496.)
- 663. Static-Test and Stress-Distribution Studies of the Matériel Division 55-Foot Cantilever All-Metal Wing. (D00.12/122/No. 3501.)
- 664. Vibration Characteristics of Aircraft Engine Crank Shafts. (D00.12/122/No. 3533.)
- 665. Additional Formulae for Seams Subjected to Axial and Lateral Loads. (D00.12/122/No. 3598.)
- 666. Dynamic Tests of Keystone B-3A Bomber Oleo Shock Absorber. (D00.12/122/No. 3392.)
- 667. The Use of Gaseous and Liquid Oxygen in the Service. (D00.12/122/No. 3443.)
- 668. Dynamic Accelerometer Calibration. (D00.12/122/No. 3457.)
- 669. Allowable Shear from Combined Bended and Torsion in Round Elliptical and Streamlined Tubes, and Allowable Normal Stress from Bending in Thin-Walled Tubes. (D00.12/122/No. 3471.)
- 670. The Mechanical Difficulties of Prestone Cooling at 300° F. Outlet Temperature. (D00.12/122/No. 3474.)
- 671. Dynamic Test of Gruss Shock Absorber, Model X-58. (D00.12/122/No. 3499.)
- 672. Comparison of the Structural Design Requirements for Airplanes with the Loads Obtained in Full-Scale Pressure-Distribution Tests. (D00.12/122/No. 3509.)
- 673. Circular Ring with Concentrated Loads. (D00.12/122/No. 3522.)
- 674. Longitudinal and Transverse Shearing Stress in a Beam of Constant or Variable Cross Section. (D00.12/122/No. 3523.)
- 675. Longitudinal and Transverse Shearing Stress in a Monocoque Fuselage of Constant or Variable Cross Section. (D00.12/122/No. 3525.)
- 676. Comparative Speed Tests of Wheels. (D00.12/122/No. 3564.)
- 677. Index To United States Army Air Corps Information Circulars 1 to 676, inclusive. (File C 13/117/1932/June.)

No.	
678	Preliminary Study of Retractable Landing Gears for High and Low Wing Monoplanes
<b>67</b> 9	Methods of Performance Calculation for Airplanes with Supercharged Engines Developed by W. Bailey Oswald
680	The Measurement of the Tail Loads in a BT-2B Airplane in Zero Thrust Glides and the Behavior of the McCollum-Peters 12-Element Telemeter Apparatus as a Flight Test Strain Recorder
681	High Speed Engine Pressure Indicators
682	Indicator Study of SV-150 Engine
683	Study of Types of Vibration Possible in Aircraft Propellers
684	An Investigation of the Stress Distribution Due to Bending and Torque in the Boeing XP-9 Semi Monocoque Fuselage
685	An Investigation of Available Information on the Strength Properties of Reinforced Skin Construction
686	Strength of Chrome-Molybdenum Tubing Under Bending Due to Transverse Loading
687	Airplane Vibrations and Flutter
688	Comparison of Various Methods of Predicting Effect of Propeller on Diving Speed
689	Flutter Control Devices
690	Tests of N.A.C.A. 2218-09 Tapered Airfoil in the Materiel Division Wind Tunnel as Compared with Tests in the N.A.C.A. Variable Density Wind Tunnel
691	Tests on Aluminum Alloy Sheet to Determine Allowable Bearing Values
692	Spot Welding and its Application to Aircraft Structure
693	Spot Welding and its Application to Aircraft Structure Corrosion-Resistant Steel 18:8
694	Exhaust Gases and Other Products of Combustion in Airplane Engines and their Effect on Man
695	Handbook of Aerodynamic Formulae
696	Shop Practice—Working and Welding Stainless Steel-Tube Bending-Building Radiator Cores Using High Melting Point Solder (A.C. Specification 11064)
697	An Investigation of the Compressive Strength Properties of Stainless Steel Sheet-Stringer Combinations
698	Analytical Determination of Optimum Pitch-Depth Ratios in Corrugated Sheet Design
699	The Column Properties of Corrugated Aluminum Alloy Sheet
700	Hnknown

701	<u>Unknown</u>
702	Vibration Characteristics of 20 Air Corps Airplanes [1935]
703	Propeller-Crankshaft Vibration Problems
704	<u>Unknown</u>
705	Unknown
706	The Compressive Strength of Stainless Steel Sheet-Stringer Combinations, Part III – Cylindrical Specimens
<b>7</b> 07	Vibration Isolating Radial Engine Mounts
708	An Investigation of Compressive Strength Properties of Stainless Steel Sheet-Stringer Combinations
709	Horsepower Correction Factors for Pressure, Temperature, and Humidity at Sea Level and Altitude
710	Pressure Cabin Investigations Phase I [1937]
711	<u>Unknown</u>
712	<u>Unknown</u>
713	Progress Report on Methods of Analysis Applicable to Monocoque Aircraft Structures
714	Tests of Wind Tunnel Flutter Model Phase I: The Critical Flutter Speed as a Function of Control Surface Dynamic Balance and Natural Frequencies of Vibration [1939]
715	The Torsional Strength of Aluminum Alloy Tubing

## INDEX TO UNITED STATES ARMY AIR CORPS INFORMATION CIRCULARS

## PART II.—LIGHTER-THAN-AIR CIRCULARS

Nos. 1 to 157, Inclusive

## SUBJECT LIST

A	Information Circular No.
Adjustment and Dispersion of Artillery Fire	148
Aerodynamics, Theoretical Course	31
Air Resistance, Comparison of the Air Resistance of the Following Airship Models: C-1, C-2, R-0, SR UB-2A	-1.
Air Service in Mobile Warfare	21
Airplanes, Tactics Employed by German Airplanes in Attacking Balloons	151
Airships, Comparison of the Air Resistance of the Following Airship Models: C-1, C-2, R-0, SR UB-2A	-1.
Airships, Speed and Ceiling of U. S. Army Airships	43
Anemometer, Use of Portable Anemometers	26
Announcement	133
Artillery:	100
Adjustment and Dispersion of Fire	148
Balloon Observation	16
Elementary Notes	150
Lectures by Major Sturgill	143
Notes for Observers	142
Ascensional Force. See "Force."	
В	
Ballasting, Condensation of Water from Engine Exhaust for Airship Ballasting	44
Balloon, Free Balloon Trip of Kite Balloon	19
Ballooning, Theory	18
Balloonist, Translations of German Documents	156
British Balloon School	145
C	
C-1, Air Resistance of the Airship Model C-1	40
C-2, Air Resistance of the Airship Model C-2	40
Captive Balloons, Observation from	11
Ceiling, Speed and Ceiling of U. S. Army Airships	43
Clamp, Danger Cone Clamp	147
Commanders, Common Mistakes of Inexperienced Company Commanders	153
Commanders, Instructions for Balloon Group Commanders.	152
Condensation of Water from Engine Exhaust for Airship Ballasting	44
Cone, Danger Cone Clamp	147
Construction, French Practice in Dirigible Construction	10
Cover, Protecting Cover for Balloon Rigging	145
Cylinder, Hydrogen	4
, D	
Danger Cone Clamp	147
Design Data for Airship Hulls	39
Dilatable Type Balloon	22
Dirigible, French Practice in Dirigible Construction	10
E	
Electrification of Observation Balloons	38
Electrostatic Properties of Balloon Fabric	6
Engine, A Short Theoretical Course in Airship Engines	32

Fabric:	F	Information
Effect of Hydrogen Impurities		
Electrostatic Properties of Rall	on Airship Fabrics	13
Tests of Balloon Fabric	oon Fabric	(
Filling Balloons		]
Fire:		2
Causes and Properties of E	ersion	148
Causes and Trevention of Fire	In Balloons	00
maneuvering bandons under Si	hell Kire	
rneprooning raracingtes	· ·	^-
Division Line Di	2L1(X)71	
- or oc, Tubic for Tinding the Ascens	IODAL PORCE OF LIBSES	
Ties Bandon, Ties Bandon Trip of	NITE BAUDON	
French Practice in Dirigible Constru	letion	10
	G	
Gas, Discharge from Pines	inal Para of	
Gases, Table for Finding the Assensi	ional Force of	9
Gases, Lift of Gases in Practical Roll	loop and Airchin Operation	3
German Captive Balloon Organization	loon and Airship Operation	42
German, Translations "Notes of the	Dallaguist"	. 14, 144
Gunnery Projectiles	Balloonist"	_ 156
		12
	H	· ·
Hulls, Characteristics of Streamline	Forms and Design Data for Airship Hulls	
Hydrogen:	Totals and Design Dava for Anship Huns	<b>3</b> 9
Cylinders.		_
For Military Purposes		4
Leakage from Balloons		_ 157
Lift of Hydrogen		- 146
Hydrogen Impurities, Effect on Airsl	hip Fabrics	_ 27
i o i i i i i i i i i i i i i i i i i i		_ 13
	I	
Impurities, Effect of Hydrogen Impu	arities on Airship Fabrics	10
imantry, Observation Balloons Servi	icing Infantry	***
imormation, Dancon Imormation ire	om Italian Army	- 136
Instruction:		_ 24
For Balloon Group Commanders	s, and Instructions Relative to Balloon Service Record Cards	150
For the Balloon Liaison Officers	in the Course of an Attack	_ 152
Synopsis of General Subjects for	Instruction of Balloon Observers	_ 20
Synopsis of Military Subjects for	r Instruction of Balloon Observers	_ 138
Synopsis of Professional Subjects	s for Instruction of Balloon Observers	_ 139
Italian, Balloon Information from Its	alian Army	_ 140
,		_ 24
Kite Balloon Free Balloon Trin of W	K	
Kite Balloon, Protection of Kite Ball	ite Balloon	_ 19
2210 Bancon, Protection of Kite Ban	oons from Lightning	_ 17
	L	
Leakage of Hydrogen from Balloons.		_ 146
Liaison Officers, Instructions for the	Balloon Liaison Officers in the Course of an Attack	90
Lut of Hydrogen		07
Line of Gases in Fractical Balloon and	1 Airship Operation	40
Lightning, Protection of Kite Balloon		- <del>1</del> 2
	М	- 17
Maneuvering Balloons under Shell Fir	re	• • •
Maneuvering Officers, Information for	r	- 149
Meteorology and War Flying		- 155
Mistakes, Common Mistakes of Inexp	perienced Company Commanders	- 141
Mobile, The Air Service in Mobile W.	arfare	
Models, Comparison of the Air Resistan	nce of the Following Airship Models: C–1, C–2, RO, SR–1, and UB–2A	- 21
, a constant		- 40
N.C. I. Observation Bull.	N	
Not Tonsion-	•	135
MEN TEHRIOHR		E

Observation:	Information Circular No
Balloon Observation in Connection with Artillery	16
Balloons Servicing Infantry	136
From Captive Balloons	11
Observers:	
Artillery Notes for Observers	142
Organization and Tactics Indispensable to Balloon Observers	137
Synopsis of General Subjects for Instruction of Balloon Observers	138
Synopsis of Military Subjects for Instruction of Balloon Observers	139
Synopsis of Professional Subjects for Instruction of Balloon Observers	140
Officers:	
Aids for Young Officers Commanding Companies	8
Common Mistakes of Inexperienced Company Commanders	153
Information for Maneuvering Officers	155
Operations of Allied Balloons in the St. Mihiel Offensive	28
Organization, General Notes on Organization and Tactics Indispensable to the Balloon Observer	137
Organization, German Captive Balloon Organization	14, 144
_	
Parachute:	
Fireproofing	29
Stevens Parachute Pack	
Tests	18
Performance, Speed and Ceiling of the U. S. Army Airships	48
Perspective, Topography and Perspective for Balloon Officers	30
Projectiles, Gunnery Projectiles.	12
R	
Resistance, Comparison of the Air Resistance of the Following Airship Models: C-1, C-2, RO, SR	_1
and UB-2A	1, 4(
Riggers, Useful Notes	2
Rigging, Protecting Cover for Balloon Rigging	145
RO, Air Resistance of the Airship Model RO	4(
Rope, Development of Manila Balloon Rope	<b>4</b> :
S	
St. Mihiel, Operations of Allied Balloons in the St. Mihiel Offensive	2 <u>8</u>
School, British Balloon School	14
Service Record Cards for Balloons	15:
Shell Fire, Maneuvering Balloons under Shell Fire	149
Speed and Ceiling of U. S. Army Airships	4
SR-1, Air Resistance of Airship Model SR-1	40
Stevens Parachute Pack	
Streamline Forms, Characteristics of Streamline Forms and Design Data for Airship Hulls	3:
Sturgill, Artillery Lectures by Major Sturgill	
T	
Tactics Employed by German Airplanes in Attacking Balloons	15
Tactics, Organization and Tactics Indispensable to the Balloon Observer	13
Telephone Lines and Equipment for Balloon Companies	15
Theory of Ballooning	1
Topography and Perspective for Balloon Officers	3
Translation of German Document "Notes of the Balloonist"	15
,	10
U III OA AM DA AM	
UB-2A, Air Resistance of Airship Model UB-2A	4
W	
Warfare, The Air Service in Mobile Warfare	
War Flying, Meteorology and War Flying	2
Water, Condensation of Water from Engine Exhaust for Airship Ballasting	14 4
Winch, NCL Observation Balloon Winch.	13
	10

## NUMERICAL LIST

No. Title of circular and Air Corps Library File No.

- 1. Tests of Balloon Fabrics. (A10.1/8.)
- 2. Extract from Report of Bureau of Standards regarding the Recommendation for Filling Balloons. (D11.322/21.)
- 3. Table for Finding the Ascensional Force of Gases. (A10.1/8/BB-24.)
- 4. Notes Concerning Hydrogen Cylinders. (A10.1/8/BB-25.)
- 5. Net Tensions. (A10.1/8/BB-46.)
- 6. Report on the Electrostatic Properties of Balloon Fabrics. (A10.1/8/BB-52.)
- 7, Stevens Parachute Pack. (A10.1/8/BB-55.)
- 8. Aids for Young Officers Commanding Companies. (A10.1/8/BB-57.)
- 9. Discharge of Gas from Pipes. (A10.1/8/BB-63.)
- 10. French Practice in Dirigible Construction. (A10.1/8/BB-67.)
- 11. Observations from Captive Balloons. (A10.1/8/BB-68.)
- 12. Gunnery Projectiles. (A10.1/8/BB-79.)
- 13. Effect of Hydrogen Impurities on Airship Fabrics. (A10.1/8/BB-85.)
- 14. German Captive Balloon Organization. (A10.1/8/BB-91.)
- 15. Parachute Tests. (A10.1/8/BB-92.)
- 16. Balloon Observation in Connection with Artillery. (A10.1/8/BB-105.)
- 17. Protection of Kite Balloon from Lightning. (A10.1/8/BB-107.)
- 18. Theory of Ballooning. (A10.1/8/BB-108.)
- 19. Report of Free Balloon Trip of Kite Balloon. (A10.1/8/BB-109.)
- 20. Service Instructions for the Balloon Liaison Officers in the Course of an Attack. (A10.1/8/BB-116.)
- 21. The Air Service in Mobile Warfare. (A10.1/8/BB-117.)
- 22. Dilatable Type Balloon. (A10.1/8/BB-120.)
- 23. Useful Notes for Riggers. (A10.1/8/BB-121.)
- 24. Balloon Information from Italian Army. (A10.1/8/BB-122.)
- 25. Operations of Allied Balloons in the Saint Mihiel Offensive. (A10.1/8/BB-123.)
- 26. Instructions for the Use of Portable Anemometers. (A10.1/8/BB-125.)
- 27. The Lift of Hydrogen. (A10.1/8/BB-127.)
- 28. Report on the Causes and Prevention of Fires in Balloons. (A10.1/8/BB-129.)
- 29. Fireproofing Parachutes. (A10.1/8/BB-132:)
- 30. Topography and Perspective for Balloon Officers. (A10.1/8/BB-115a.)
- 31. Theoretical Course in Aerodynamics. (A10.11/7.)
- 32. A Short Theoretical Course in Airship Engines. (C53.231/8.)
  Nos. 33 to 37, both inclusive, not printed.
- 38. Electrification of Observation Balloons. (D52.81/49.)
- 39. Characteristics of Streamline Forms and Design Data for Airship Hulls. (D52.76/5.)
- 40. Comparison of the Air Resistance of the Following Airship Models: C-1, C-2, RO, SR-1, and UB-2A. (D52.7/139.)
- 41. Development of Manila Balloon Rope. (D52.83/31.)
- 41. Addendum to Information Circular, Volume I, No. 41, Development of Manila Balloon Rope. (D52.83/31/Addendum.)
- 42. The Lift of Gases in Practical Balloon and Airship Operation. (D11.32/51.)
- 43. Speed and Ceiling of U. S. Army Airships. (D52.7/163.)
- 44. Condensation of Water from Engine Exhaust for Airship Ballasting. (Bureau of Standards Report.) (D52.83/38.)
  - Nos. 45 to 132, both inclusive, not printed.
- 133. Announcement. (D00.12/75.)
- 134. Not printed.
- \*135. N. C. L. Observation Balloon Winch. (D52.83/14.)
- \*136. Observation Balloons Serving Infantry. (C71.2/20.)
- \*137. General Notes on Organization and Tactics Indispensable to the Balloon Observer. (A10.12/1.)
- 138. Synopsis of General Subjects for Instruction of Balloon Observers. (Reprint of Balloon Notes A. E. F. No. 11.) (A10.12/12.)

<sup>•</sup> Supply exhausted. Copies may be obtained on loan by Government activities from the Air Corps Library, Office, Chief of the Air Corps.

No. Title of circular and Air Corps Library File No.

- \*139. Synopsis Military Subjects for Instruction of Balloon Observers. (Reprint of Balloon Notes A. E. F. No. 12.) (A10.12/1.)
- \*140. Synopsis of Professional Subjects for Instruction of Balloon Observers. (Reprint of Balloon Notes A. E. F. No. 13.) (A10.12/1.)
- 141. Meteorology and War Flying. (Reprint of Balloon Notes A. E. F. No. 23.) (A10.12/1.)
- \*142. Artillery Notes for Observers. (Reprint of Balloon Notes A. E. F. No. 24.) (A10.12/1.)
- \*143. Artillery Lectures by Major Sturgill. (Reprint of Balloon Notes A. E. F. No. 25.) (A10.12/1.)

\*144. German Captive Balloon Organization. (Balloon Notes A. E. F. No. 27.) (A10.12/1.)

- \*145. British Balloon School and Description of Protecting Cover for Balloon Rigging. (Reprint of Balloon Notes A. E. F. No. 28.) (A10.12/1.)
- \*146. Memo. Regarding Leakage of Hydrogen from Balloons. (Reprint of Balloon Notes A. E. F. No. 39.)
  (A10.12/1.)
- \*147. Danger Cone Clamp. (Reprint of Balloon Notes A. E. F. No. 43.) (A10.12/1.)
- \*148. Artillery Adjustment and Dispersion of Fire. (Reprint of Balloon Notes A. E. F. No. 44.) (A10.12/1.)
- \*149. Maneuvering Balloons under Shell Fire. (Balloon Notes A. E. F. No. 65.) (A10.12/1.)
- \*150. Elementary Notes on Artillery. (Reprint of Balloon Notes A. E. F. No. 71.) (A10.12/1.)
- \*151. Tactics Employed by German Airplanes in Attacking Balloons. (Reprint of Balloon Notes A. E. F. No. 49.) (A10.12/1.)
- \*152. Instructions for Balloon Group Commanders. Instructions Relative to Balloon Service Record Cards. (Reprint of Balloon Notes Nos. 53 and 63.) (A10.12/1.)
- \*153. Common Mistakes of Inexperienced Company Commanders. (Reprint of Balloon Notes A. E. F. No. 54.) (A10.12/1.)
- 154. Telephone Lines and Equipment for Balloon Companies. (Reprint of Balloon Notes A. E. F. No. 56.)
  (A10.12/1.)
- \*155. Information for Maneuvering Officers. (Reprint of Balloon Notes A. E. F. No. 57.) (A10.12/1.)
- \*156. Translations of German Documents on "Notes of the Balloonist." (Balloon Notes A. E. F. No. 64.)
  (A10.12/1.)
- 157. Hydrogen for Military Purposes. (D11.322/19.)

<sup>\*</sup> Supply exhausted. Copies may be obtained on loan by Government activities from the Air Corps Library, Office, Chief of the Air Corps